



STATE OF HAWAII
IN-FLIGHT FORM DIGITIZATION
FEASIBILITY STUDY

July 2023

Prepared By:

[ANTHOLOGY®]
RESEARCH

 **DataHouse**

ACKNOWLEDGMENTS

Anthology Research and DataHouse would like to thank the State of Hawai'i Department of Business, Economic Development and Tourism (DBEDT) project management team – Jennifer Chun and Minh-Chau Chun – for their close involvement in each step of this research. Additionally, the research team would like to thank those who contributed to the design of the research, including Dr. Eugene Tian (DBEDT) and Jonathan Ho and Helmuth Rogg of the State of Hawai'i Department of Agriculture (HDOA).

TABLE OF CONTENTS

| | |
|--|-----------|
| ACKNOWLEDGMENTS | I |
| TABLE OF CONTENTS | II |
| EXECUTIVE SUMMARY | 1 |
| BACKGROUND..... | 1 |
| CONCLUSIONS | 1 |
| KEY STAKEHOLDER REACTIONS TO CONCEPT OF DIGITIZATION..... | 3 |
| INTRODUCTION & METHODOLOGY | 6 |
| INTRODUCTION | 6 |
| METHODOLOGY..... | 7 |
| CONCEPTUAL MODELS OF A DIGITIZED SYSTEM | 10 |
| 1: DIGITIZED SYSTEM MODEL (DSM)..... | 10 |
| 1.1: <i>User Experience</i> | 12 |
| 1.2: <i>Application Functions</i> | 12 |
| 1.3: <i>Data Storage</i> | 14 |
| 1.4: <i>Integration</i> | 14 |
| 1.5: <i>Infrastructure</i> | 15 |
| 1.6: <i>System Maintenance & Operations (M&O)</i> | 15 |
| 2: OPERATIONAL WORKFLOW MODEL (OWM)..... | 17 |
| 2.1: <i>Travel Workflow</i> | 19 |
| 2.2: <i>Compliance and Enforcement Options</i> | 21 |
| 2.3: <i>Paper Form Option</i> | 22 |
| 2.4: <i>Tourism Survey Options</i> | 23 |
| 3: SYSTEM IMPLEMENTATION MODEL (SIM) | 24 |
| 3.1: <i>Common Implementation Approaches</i> | 24 |
| 3.2: <i>Implementation Considerations</i> | 25 |
| FEASIBILITY ANALYSIS | 26 |
| 4: TECHNICAL FEASIBILITY..... | 26 |
| 4.1: <i>System Model – User Experience</i> | 28 |
| 4.2: <i>System Model – Application functions</i> | 30 |
| 4.3: <i>System Model – Data Storage</i> | 31 |
| 4.4: <i>System Model – Integration</i> | 32 |
| 4.5: <i>System Model – Infrastructure</i> | 33 |
| 4.6: <i>System Model – Maintenance & Operations (M&O)</i> | 34 |
| 5: FINANCIAL FEASIBILITY | 36 |
| 5.1: <i>System Model – Application Development</i> | 37 |
| 5.2: <i>System Model – Infrastructure</i> | 38 |
| 5.3: <i>Operations Model – System Maintenance & Operations (M&O)</i> | 38 |
| 5.4: <i>Operations Model – Communication & Education</i> | 39 |

| | |
|---|-----------|
| 5.5: Operations Model – Digitized System Operations | 40 |
| 5.6: Operations Model – Digitized System Helpdesk & Support | 40 |
| 5.7: Operations Model – Hybrid..... | 41 |
| 5.8: Operations Model – Tourism Survey as Intercept | 41 |
| 6: OPERATIONAL FEASIBILITY | 43 |
| 6.1: Operations Model – Travel Workflow | 45 |
| 6.2: Operations Model – Compliance & Enforcement Options | 50 |
| 6.3: Operations Model – Paper Form Option | 51 |
| 6.4: Operations Model – Tourism Survey Options..... | 52 |
| 6.5: Implementation Model – Pilot Program | 53 |
| 6.6: Implementation Model – Policies & Procedures | 54 |
| 7: USER ACCEPTANCE FEASIBILITY | 55 |
| 7.1: Willingness to Adopt..... | 55 |
| 7.2: Form Format Preference | 55 |
| 7.3: Technological Requirements | 56 |
| 7.4: Information Sources..... | 57 |
| APPENDIX A: STAKEHOLDER INTERVIEW FINDINGS | 58 |
| 1: GENERAL CONSIDERATIONS | 58 |
| 1.1: Benefits of Digitizing the In-flight Form | 58 |
| 1.2: Concerns With Digitizing the In-flight Form..... | 67 |
| 2: USER EXPERIENCE | 76 |
| 2.1: Digital Adoption | 76 |
| 2.2: Simple & Easy-to-Use..... | 76 |
| 2.3: Accessibility..... | 78 |
| 2.4: Technical Components | 78 |
| 2.5: Maintaining a Paper Option | 79 |
| 2.6: Self-Service..... | 80 |
| 2.7: Language Requirements | 80 |
| 2.8: One Form Per Party..... | 81 |
| 3: APPLICATION FUNCTIONALITY | 83 |
| 3.1: Notification System | 83 |
| 3.2: Hyperlink to State-Managed Website..... | 84 |
| 3.3: Embedded in Airline Website/Mobile Application | 85 |
| 3.4: State-Managed Mobile Application | 86 |
| 3.5: Integrated with Check-In..... | 88 |
| 3.6: Diverse Airline Systems | 89 |
| 3.7: Collection Timeline..... | 90 |
| 3.8: Intercept for Tourism Survey | 91 |
| 4: DATA..... | 93 |
| 4.1: Data Utilization – Agricultural Declaration Form | 93 |
| 4.2: Data Utilization – Tourism Survey..... | 93 |
| 4.3: Data Utilization – PAX (Passenger) Count..... | 96 |
| 4.4: Data Utilization – Visitor Arrivals..... | 97 |

| | |
|---|------------|
| 4.5: <i>Separating Agricultural Declaration Form and Tourism Survey</i> | 98 |
| 5: INTEGRATION..... | 100 |
| 5.1: <i>Data Housed by State</i> | 100 |
| 5.2: <i>Transferring Data</i> | 101 |
| 5.3: <i>Sharing Passenger Count Data with The State</i> | 102 |
| 5.4: <i>Data Structure</i> | 103 |
| 6: INFRASTRUCTURE..... | 104 |
| 6.1: <i>In-flight Wi-Fi</i> | 104 |
| 6.2: <i>Airport Wi-Fi</i> | 106 |
| 6.3: <i>Onboard Devices</i> | 106 |
| 6.4: <i>Kiosks</i> | 107 |
| 6.5: <i>Deep Links/Pre-Populating</i> | 107 |
| 6.6: <i>Contact Sources</i> | 108 |
| 6.7: <i>Data Storage</i> | 109 |
| 6.8: <i>Analytical Software</i> | 109 |
| 7: OPERATIONS | 111 |
| 7.1: <i>Management</i> | 111 |
| 7.2: <i>Training</i> | 112 |
| 7.3: <i>Education & Messaging</i> | 113 |
| 7.4: <i>Compliance & Enforcement</i> | 115 |
| 7.6: <i>Incentives</i> | 118 |
| 8: POLICY & PROCEDURE | 120 |
| 8.1: <i>Current Policy</i> | 120 |
| 8.2: <i>Potential Policy Concerns</i> | 121 |
| 8.3: <i>Potential Policy Changes</i> | 122 |
| 9: IMPLEMENTATION | 124 |
| 9.1: <i>Planning & Preparation</i> | 124 |
| 9.2: <i>Rollout</i> | 126 |
| 9.3: <i>Pilot Program</i> | 129 |
| APPENDIX B: SURVEY OF TRAVELERS | 131 |
| 1.1: <i>In-Flight Forms</i> | 131 |
| 1.2: <i>Online Forms</i> | 133 |
| 1.3: <i>Preferred Online Distribution Channel</i> | 135 |
| 1.4: <i>Preferred Timeline</i> | 140 |
| 1.5: <i>Travel History</i> | 141 |
| 1.6: <i>Access to Technology - Smartphone</i> | 143 |
| 1.7: <i>Sources of Information – Changes to Online Form</i> | 144 |
| 1.8: <i>Profile of Respondents</i> | 145 |
| APPENDIX C: DISCUSSION OUTLINE | 146 |
| APPENDIX D: SURVEY INSTRUMENT | 154 |

TABLE OF FIGURES

| | |
|--|-----------|
| Figure 1: Digitized System Model..... | 11 |
| Figure 2: Operational Workflow Model | 18 |
| Figure 3: System Implementation Model..... | 25 |
| Figure 4: Summary of Technical Feasibility Components | 27 |
| Figure 5: Summary of Operational Feasibility Components | 44 |

EXECUTIVE SUMMARY

BACKGROUND

Purpose & Objectives: Since 1950, the State of Hawai'i has relied on a paper-based form to collect data from airline passengers entering the state from the U.S. Mainland. The form currently being distributed (also referred to as the In-flight Form) has the State of Hawai'i Department of Agriculture (HDOA) Plants and Animals Declaration Form on one side and the State tourism survey on the other side. The paper-based process requires printing, storing, distributing, collecting, processing, and shredding of the paper forms.

Advances in technology – specifically the development of the Internet, personal digital devices and cloud storage capacity – have spurred discussions about digitizing the In-flight Form. Given the significant number and variety of stakeholders involved in printing, delivering, and processing the current paper-based form, it is important to gather perspectives from each group involved in order to ensure any digitization effort can best meet their needs.

The objective of the project is to study and report the feasibility of digitizing the In-flight Form to reach the goal of satisfying all stakeholders, including HDOA, the State of Hawai'i Department of Business, Economic Development and Tourism (DBEDT), airlines, passengers, and users of the tourism data.

Summary of Methodology: For this study, DBEDT contracted Anthology Research and DataHouse to conduct a comprehensive feasibility study for digitizing the HDOA declaration form and the State tourism survey and implementing a system to manage data storage, collection, and dissemination to stakeholders. The study examines and includes considerations in four key areas: technical, financial, operational, and user acceptance feasibility.

To gather in-depth feedback from stakeholders, Anthology Research conducted qualitative research in the form of in-depth one-on-one and small group interviews with 44 individuals representing 19 different stakeholder entities. A list of these entities is on page 7. A representative from DataHouse attended each research interview to support technical lines of questioning.

CONCLUSIONS

Net overall reaction to concept of digitization is positive. There is significant enthusiasm for digitizing the In-flight Form, to align with modern airline passenger experiences and expectations. Nearly all stakeholders interviewed see potential benefits to digitization that include a smoother experience for passengers, enhanced safety during flight, increased accuracy of data collected, more timely reporting, long-term cost savings, and more.

Stakeholders are not yet uniformly ready for digitization. There are barriers to digitization that must be overcome before it can be successful. The nature of the barriers differs for each stakeholder group, but

include the availability of Internet connectivity, especially in-flight, differences in opinion about responsibilities, especially between the State and airlines, existing statutes enabling the In-flight Form that will need to be updated, and preference for a paper form among one in five travelers.

FEASIBILITY ANALYSIS

High degree of technical feasibility: Digitization of the In-flight Form was found to be technically feasible. Many of the components identified in the Digitized System Model are achievable with current technologies, infrastructure, software frameworks, and methodologies. According to the In-flight Form Digitization Survey, 92% of travelers had at least one person with a smartphone with Internet access that can access a digitized system. The integration component was ranked lower in technical feasibility due to conflicting perspectives among stakeholders regarding data to be shared, methods of integration, and capabilities of modifying airline systems. Additional discussions with stakeholders will be necessary to resolve these integration issues.

Variable degree of financial feasibility: Costs can vary significantly depending upon the scope, policy, and overall vision of the digitized traveler program. As such, it is important to note the importance of defining and documenting these driving factors that will impact budget for planning purposes. The table below covers initial and recurring costs (annually) in a scenario where the agricultural declaration form and tourism survey remain together. For comparison purposes, the cost of the current paper-based process is also shown, along with calculated cost savings or additional expenses that would result in a transition to a digital form.

| PROJECTED DIGITIZATION COSTS | | | | |
|---|--|--|---|--|
| Component | Initial Costs | | Recurring Costs (Annual) | |
| | Low | High | Low | High |
| Application Development (User Experience, Process and Data, Integration) | \$500,000 | \$2,200,000 | - | - |
| Infrastructure | - | - | \$24,000 | \$48,000 |
| System Maintenance & Operations | - | - | \$100,000 | \$660,000 |
| Communication & Education | \$25,000 | \$200,000 | \$0 | \$1,000,000 |
| Digitized System Operations | - | - | - | \$900,000 |
| Digitized System Helpdesk & Support | - | - | \$351,000 | \$1,100,000 |
| Hybrid – Maintain Paper Form | - | - | - | \$122,911 |
| TOTAL | \$525,000 | \$2,400,000 | \$475,000 | \$3,830,911 |
| CURRENT PROCESS COSTS | - | - | \$614,556 | \$614,556 |
| FINANCIAL IMPACT OF DIGITIZATION | (\$525,000) ADDITIONAL COST | (\$2,400,000) ADDITIONAL COST | \$139,556 COST SAVINGS | (\$3,216,355) ADDITIONAL COST |

| PROJECTED COSTS TO CONDUCT TOURISM SURVEY AS INTERCEPT | | | | |
|--|------------------------------------|------|--------------------------|-------------|
| Component | Initial Costs | | Recurring Costs (Annual) | |
| | Low | High | Low | High |
| Separate Tourism Survey Conducted using Intercept Methodology | Included in Annual Vendor Contract | | \$2,121,600 | \$4,243,200 |

Separating the agricultural declaration and tourism survey and conducting the survey of domestic visitors using an intercept methodology would not substantially impact the cost of developing and maintaining a digital In-flight Form. Assuming that the survey would be developed and executed by a professional market research vendor, as is the case with the DBEDT Visitor Departure Survey, the vendor would carry within its annual contract all initial costs for survey development, printing, training, etc.

However, conducting an intercept survey to gather even a small percentage of the 400,000 completed forms that are currently collected would carry a substantial recurring cost.

Variable degree of operational feasibility: The operational feasibility of digitizing the In-flight Form varied for different components of the Workflow Operational Model. In general, the overall process of notifying travelers, completing the digitized agricultural declaration form and tourism survey, conducting inspections, and compiling data is considered operationally feasible. Many of these components were ranked as moderate to high in operational feasibility. However, certain components were ranked low to moderate due to conflicting perspectives among stakeholders regarding compliance and enforcement, maintaining a paper form option, and sharing of airline data. There was also significant concern about the operational feasibility of maintaining the current sample size for the tourism survey. Additional discussions with stakeholders will be necessary to resolve these issues.

Somewhat high degree of user acceptance feasibility: A strong proportion of survey respondents (81%) would prefer to see the form in a digital format and about one in five passengers (19%) would prefer the paper version. However, it was seen that just under one in ten (8%) of those flying to Hawai'i do not have access to a smartphone within their travel party which may indicate the need for implementing a hybrid format if 100% compliance is the goal.

KEY STAKEHOLDER REACTIONS TO CONCEPT OF DIGITIZATION

Significant concerns exist among stakeholders. Nearly all stakeholders voiced concerns about various aspects of digitization, including potential disruptions to the passenger check-in experience, other negative operational impacts to airlines, lack of universal in-flight Wi-Fi, need for re-training of flight crews, responsibility and method for enforcing compliance, data privacy and security, short-term implementation costs, disruption of longitudinal data tracking, and more.

Burden of digitization rests with the State of Hawai'i. Airlines are willing to work with the State to collaboratively develop solutions for digitization that meet the needs of stakeholders. However, in general,

airlines and some other stakeholders expect the burden of development, hosting, data management, compliance, and related communications to rest with the State of Hawai'i.

Splitting the HDOA declaration and DBEDT tourism survey would have ripple effects. Some stakeholders expressed concerns that possible solutions may include separating the HDOA declaration and DBEDT tourism survey. If visitor data were collected through an intercept survey, the sample size would be reduced from the current level of approximately 400,000 a month to 20,000 a month, and cost would increase by a factor of 4.6 to 10 as compared with data collected through the In-flight Form. Such a change in methodology would also risk disrupting the longitudinal data set that stretches back decades. This shift could also have an impact on the quality of other research projects that rely on information collected from the In-flight Form, by dramatically reducing the available sample for those studies. These projects include the DBEDT Visitor Satisfaction and Activity Survey, the estimation of Hawai'i's intended residents, and the estimation of Hawai'i's de facto population.

Daily passenger count data for domestic flights would need to be gathered differently. Digitization of the In-flight Form would disable the current process of collecting passenger counts via handwritten counts provided by flight attendants on the Important Envelope upon landing. In order to continue receiving this data, stakeholder discussions with airlines and the Department of Transportation (DOT) will be necessary to explore new avenues of reporting daily passenger counts. Otherwise, this information will only be available on a monthly basis.

Accuracy of flight information may potentially be compromised. A benefit of the Important Envelope is that it gathers all of the forms for a flight in one place. Passengers often provide incorrect flight information on the form, and the Important Envelope mitigates such errors. Inaccurate flight information will potentially have negative impacts on the HDOA's inspection process.

Achieving 100% compliance would be an unrealistic expectation. Given barriers such as some passengers not having access to mobile devices and some airline carriers not currently offering in-flight Wi-Fi on all transpacific flights, many stakeholders shared that 100% compliance through a digitized form would be an unrealistic expectation. Doing so would require a significant investment in human resources by the airlines or airports to check completed forms, a cost that was seen as unreasonable to many key stakeholders.

An initial hybrid rollout will increase compliance. While stakeholders commonly deemed 100% compliance as unachievable, many felt that the digitization effort may receive higher compliance rates by rolling out in a hybrid format where a paper form is still available to passengers who need it. Moreover, paper forms might need to be available should an outage in the digital system occur.

An incremental pilot approach is preferred. Many stakeholders request that a pilot program be conducted to identify issues, refine the system and obtain lessons learned prior to a full-scale rollout. Some airlines expressed willingness to participate in pilots with the State using selected flights or routes. Their expectation is the pilot program will be limited in duration and will eventually result in the full implementation of a digitized system.

Enabling legislation might be needed. The current legislation, Hawaii Revised Statutes (HRS) 150A-5(2), was written specifically for a paper In-flight Form, so changes in the statutes might be needed if the form is digitized. The changes should address the time window that is allowed to declare prior to flight, responsibilities for all parties, and how compliance and enforcement will be handled.

INTRODUCTION & METHODOLOGY

INTRODUCTION

Since 1946, passengers entering Hawai'i on domestic flights from the U.S. Mainland have been required to complete the Hawai'i Plants and Animals Declaration Form . This practice was mandated by Section 1351, Revised Laws of Hawai'i 1945 and the Hawai'i State of Hawai'i Department of Agriculture (HDOA) has been the agency responsible for the implementation and enforcement of the law. Starting in October 1950, the Hawai'i Visitor Bureau (HVB) added tourism survey questions to the other side of the form to collect information on passengers' (visitors, returning residents, intended residents, transit passengers) age, party size, purpose of trip, island visitation, and length of stay in Hawai'i.

Since its inception, the responsibility and costs for printing, storage, distribution, collection, data processing, and shredding of the In-flight Form has been with the tourism research program at HVB, State of Hawai'i Department of Business, Economic Development and Tourism (DBEDT), or Hawai'i Tourism Authority (HTA). HDOA personnel review the completed forms at airport gates when passengers deplane and then pass on the forms to DBEDT for visitor data processing.

The procedures in collecting visitor data include the following steps:

- **Printing the In-flight Form and Important Envelope:** DBEDT solicited competitive bids and contracted a printing company to print, package and deliver the double-sided In-flight Forms. Another printing company is contracted to print, package and deliver envelopes labeled "Important" that are used to store the completed forms from each flight. In-flight Forms are delivered on a monthly basis to the HDOA and to United Airlines Cargo. United Airlines, being the largest of the carriers, requests direct delivery, which saves time and labor of having to pick up forms from HDOA. Most airlines keep a supply of Important Envelopes on hand and will notify DBEDT's Tourism Research Branch if more is needed. Deliveries of envelopes are made within three working days upon request.
- **Storage of the In-flight Forms:** Forms are stored at the HDOA facility at the Daniel K. Inouye International Airport (HNL) and at United Airlines Cargo.
- **Distribution of the In-flight Forms to airlines:** Airlines pick up forms from the HDOA office at HNL once a month or as needed, then distribute the forms within their operations.
- **Collection of completed In-flight Forms:** Forms are collected by flight crew from each flight, placed in an Important Envelope, and are passed to HDOA inspectors to review. At HNL, after reviewing the forms, HDOA inspectors place these forms in boxes for pick up by the contractor hired by DBEDT to scan the forms and process domestic visitor data. On the neighbor islands, forms collected by HDOA offices are sent to the contractor via FedEx on a weekly or biweekly basis.

- **Scanning of the forms into electronic files and processing the data:** DBEDT contracts with a professional market research vendor to conduct the domestic visitor survey, including scanning, cleaning, processing and reporting. The same contractor hires a shredding service to dispose the forms after a pre-determined period.
- **Reporting visitor statistics:** DBEDT's Research and Economic Analysis Division publishes numerous reports based on the In-flight Form data and sample derived from the form. These reports include the daily passenger counts, monthly visitor statistics reports, quarterly visitor satisfaction and activity reports and more, posted on the DBEDT and HTA websites.

METHODOLOGY

For this study, DBEDT contracted Anthology Research and DataHouse to conduct a comprehensive feasibility study for digitizing the In-flight Form, which consists of the HDOA declaration form on one side and the DBEDT tourism survey on the reverse, and implementing a system to manage data storage, collection, and dissemination to stakeholders. The study examines and includes considerations in four key areas:

- Technical feasibility
- Financial feasibility
- Operational feasibility
- User Acceptance feasibility

This report includes the results of the feasibility study, which was comprised of three research components and informed and provided the basis for the feasibility analysis: discovery in the form of a facilitated research charrette, qualitative research in the form of in-depth individual and group interviews with key stakeholders identified by Anthology and DataHouse with input and approval of DBEDT staff, and quantitative research in the form of surveys of visitors and residents who travel to/from the U.S Mainland.

Stakeholder Charrette

To inform the design of the research and development of the research instruments, on March 24, 2023, Anthology Research conducted a three-hour facilitated research charrette with members of the project team including representatives from HDOA, DBEDT, DataHouse and Anthology Research.

Executive Research Interviews and Small Group Stakeholder Discussions

To gather in-depth feedback from stakeholders, Anthology Research conducted qualitative research in the form of in-depth one-on-one and small group interviews with 44 individuals representing 19 different stakeholder entities as noted below. A representative of DataHouse attended each research interview to support technical lines of questioning.

- State of Hawai'i Department of Agriculture Plant Industry Division, Plant Quarantine Branch
- State of Hawai'i Department of Agriculture Animal Industry Division, Animal Quarantine Branch
- State of Hawai'i Department of Business, Economic Development and Tourism Research and Economic Analysis Division
- State of Hawai'i Office of Enterprise Technology Services
- State of Hawai'i Department of Transportation
- Hawai'i Tourism Authority
- Hawai'i State Senate
- Hawai'i State House of Representatives
- Alaska Airlines
- American Airlines
- Delta Airlines
- Hawaiian Airlines
- Southwest Airlines
- United Airlines
- Anthology Research, Visitor Satisfaction and Activity Survey contractor
- Omnitrak, Departure Visitor Characteristics and Expenditure Survey contractor
- SMS Research, Domestic In-flight Visitor Survey contractor
- Economists, Users of tourism data

The discussions were held from April 24, 2023, to June 20, 2023, either in person or virtually using videoconferencing software. With permission, discussions were recorded for transcription and documentation purposes only. The discussions were facilitated by Anthology Research Senior Partner David Pettinger.

The discussion outline used in these research interviews was developed by Anthology Research, with input from DataHouse and DBEDT. A copy of the discussion outline used for the qualitative study is located in Appendix A of this report.

It is important to note that qualitative research offers the type of dynamic feedback necessary to make decisions required in today's ever-changing business environment. The client needs to keep in mind there are strengths and weaknesses inherent in this form of research because of the relatively small sample sizes used in this methodology. One of the great strengths is the ability to discuss in depth the issue being explored. This technique ensures that the full range of opinions, emotions and reasoning surrounding a topic are brought out. However, while the results are excellent at providing trending and directional information, they are not necessarily statistically projectable to the general population.

Surveys of Visitors and Hawai'i Residents

In order to gauge user acceptance of a digitized In-flight Form, Anthology conducted a mixed-mode survey that included an in-person intercept of visitors and residents departing for U.S. Mainland destinations at HNL, as well as an online survey of visitors who had recently stayed in Hawai'i and a general population survey of Hawai'i residents who had traveled to the U.S. Mainland in the last five years.

The sample for the online visitor survey was randomly selected from unused sample available from the DBEDT Visitor Satisfaction and Activity Survey; the Hawai'i resident online survey sample was compiled from a third-party sample provider, publicly available lists of Hawai'i residents and Anthology Research's proprietary resident panel.

A total of 1,097 surveys were completed between May 18 and June 14, 2023. The margin of error for the overall sample is +/- 2.96% at the 95% level of confidence. Overall totals were weighted to reflect the actual proportions of visitors and residents among arriving passengers from U.S. airports, based on DBEDT data from April 2023.

Sample sizes and fielding dates are shown below by segment:

- AIRPORT (Residents and Visitors): n=347, May 18-May 23
- ONLINE (Visitors): n=458, May 27-June 13
- ONLINE (Residents): n=292, June 9-June 14

The questionnaire used in the study was developed by Anthology Research with input and approval of the DBEDT project team. The questionnaire is included in the appendix of this report.

CONCEPTUAL MODELS OF A DIGITIZED SYSTEM

System modeling is the process of developing abstract models to represent a system, including varying views and perspectives. Models are useful to visualize the user experience, data, workflows, and functionality of a system and the environment in which it will operate. Models are also used to represent the operations of a system and how the system could be implemented. Creating models of a digitized in-flight system establishes a conceptual framework for what a digitized system could look like and provides a basis for evaluating feasibility across various perspectives. Conceptual models also provide a framework for communicating with stakeholders, negotiating conflicting perspectives, defining and improving processes, and drilling down into further details and requirements. Conceptual models are not intended to represent the final design of the system but to provide visual frameworks to represent the digitized system being considered.

1: DIGITIZED SYSTEM MODEL (DSM)

The Digitized System Model represents the overall technical solution and its main components in the form of a solution stack. In computing, a solution stack is a set of subsystems or components needed to create a complete solution. Each layer of the Digitized System Model represents a component of a digital solution that supports the layers above it. The Digitized System Model will be used to perform technical and financial feasibility analysis.

The Digitized System Model shown below represents a conceptual view of the technical layers that make up the digitized system. The user experience layers provide end users with access to the system. The application functions layer contains the program logic and business rules that define the functionality of the digitized system. The data storage layer stores and manages the data used in the application and the integration layer handles data interfaces with other systems. The infrastructure layer includes the network, servers, storage, and data center facilities and the maintenance and operations layer include the ongoing operation of the digitized system.

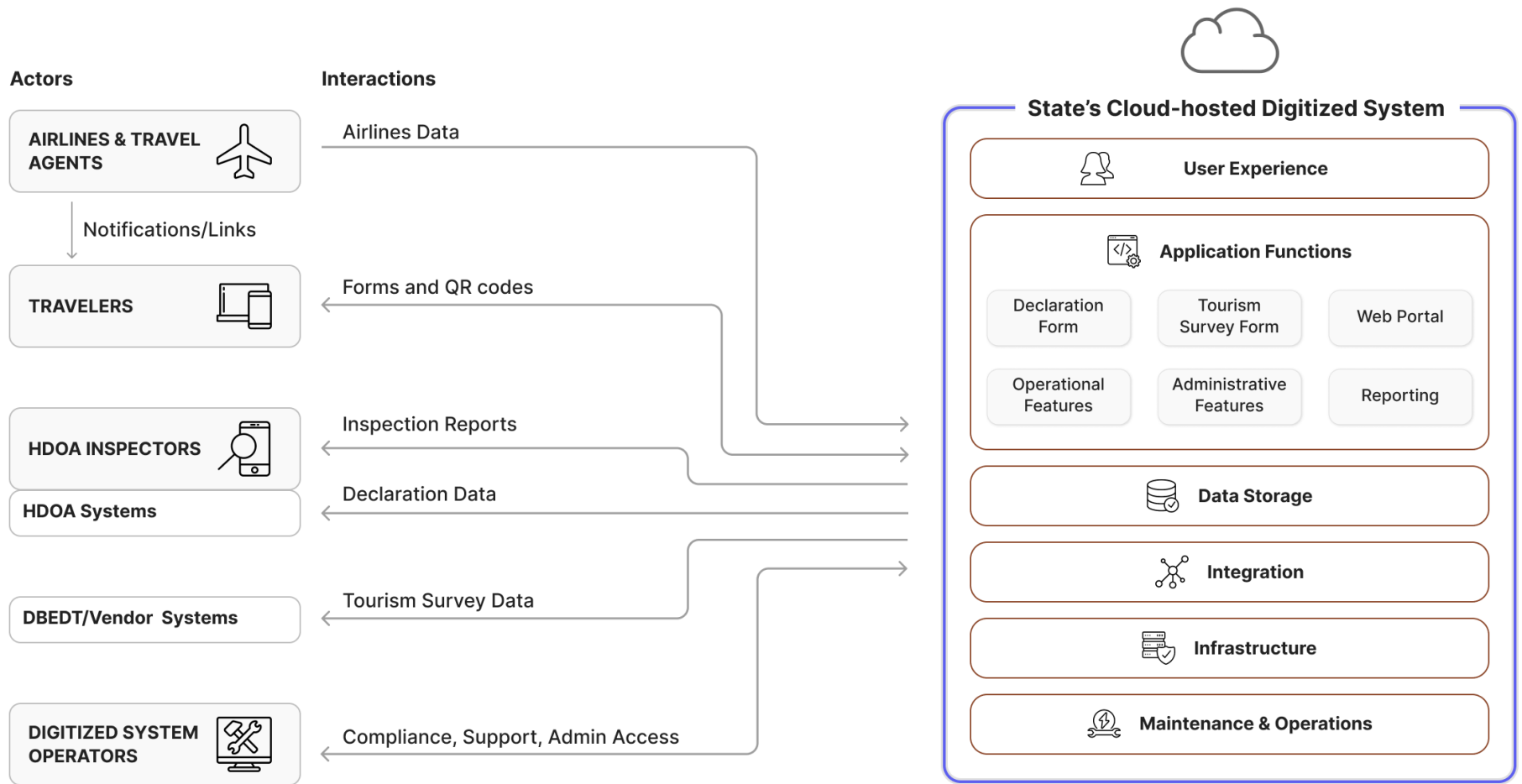


Figure 1: Digitized System Model

1.1: USER EXPERIENCE

The user experience of a digitized system is an important component because this is how end users will interact with the system. A properly designed user experience can significantly increase user adoption and satisfaction. The following user experience features were identified by stakeholders:

- **1.1.1:** The digitized system should be user-friendly and very simple to use to promote adoption and reduce support. Forms should be concise with as few fields as possible to encourage compliance and be designed to be easily filled out on a mobile device.
- **1.1.2:** The digitized system should support access from multiple devices such as mobile phones, tablets, and computers using a web browser. According to the In-flight Form Digitization Survey, a mobile-friendly website (57%) was preferred over downloading a mobile app (19%).
- **1.1.3:** The system should be accessible via the Internet from anywhere such as at home, at the airport, and in flight. When using mobile devices, offline access to certain functions is also desirable.
- **1.1.4:** The system should be multilingual and support the languages available on the existing paper form with the ability to add new languages when needed. Language requirements vary by airline depending on the markets they serve.
- **1.1.5:** The system should be ADA compliant and designed for accessibility. The system should also be secured with two-factor authentication, encryption, and access controls.

1.2: APPLICATION FUNCTIONS

Application functions are the core component of a digitized system and define its functional and data requirements. The following functional, process, and data considerations were identified by stakeholders:

- **1.2.1: Secure Portal Access**
 - **1.2.1.1:** The digitized system should include a secure web portal with a home page that explains its purpose and intent and provides instructions and other informational content.
 - **1.2.1.2:** Each user should be required to register for an account using industry-standard methods for verifying the user's email address and phone number and requesting password and user ID assistance.
 - **1.2.1.3:** Once registered, the user should be able to update their profile, receive notices, view history, and complete the agricultural declaration form and tourism survey.

- **1.2.2: Agricultural Declaration Form**
 - **1.2.2.1:** The system should present a digitized version of the paper agricultural declaration form, pre-filled with user account data.
 - **1.2.2.2:** Data entry fields including dates, addresses, phone numbers, etc. should be validated to ensure accuracy and data integrity.
 - **1.2.2.3:** The system should retain a history of past forms for repeat travelers.
 - **1.2.2.4:** Airlines and flight numbers should be in drop-down lists on the form to ensure accuracy and simplify data entry.
 - **1.2.2.5:** All data should be stored for viewing and updating prior to submittal.
 - **1.2.2.6:** The system should generate a QR code as proof of completion and send the QR code to the traveler.
 - **1.2.2.7:** A quick declaration form feature that does not require a user account should be provided.

- **1.2.3: Tourism Survey**
 - **1.2.3.1:** The system should present a digitized version of the paper tourism survey, pre-filled with user account data.
 - **1.2.3.2:** Data entry fields including dates, addresses, phone numbers, etc. should be validated to ensure data integrity.
 - **1.2.3.3:** The system should retain a history of past forms for repeat travelers.
 - **1.2.3.4:** All data should be stored for viewing and updating prior to submittal.
 - **1.2.3.5:** The tourism survey should be designed to encourage participation when completing the mandatory agricultural declaration form such as a scrollable web page for both the agricultural declaration form and tourism survey.

- **1.2.4: Operational Features**
 - **1.2.4.1:** The system should include features to support the operations of the digitized program. These features include allowing operator access to view all traveler reports, assisting travelers with filling in forms, QR code scanning to validate compliance, and producing management reports.

- **1.2.5: Administrative Features**
 - **1.2.5.1:** The system should have administrative functions to allow authorized system administrators and support staff to configure the system, manage user accounts and system tables, view logs and dashboards, and manage portal content.
- **1.2.6: Reporting**
 - **1.2.6.1:** The digitized system should include a reporting platform that allows for printed and on-screen report generation and the ability to download and export data in industry-standard formats with selection criteria, filters, and sort capabilities applied.

1.3: DATA STORAGE

The digitized system requires data to be stored and retained for processing, integration, historical, and reporting purposes. The following data storage considerations were identified by stakeholders:

- **1.3.1:** Using HTA traveler statistic data from 2019, approximately 6.3 million people traveled to Hawai'i domestically. Each In-flight Form (two sides) contains approximately 500 bytes of text-only data if all fields are filled. The annual storage requirement is conservatively estimated at 5GB including staging and redundancy. In addition to storage, the following considerations were raised by stakeholders:
 - **1.3.1.1:** Data on travel and traveler's personal information are considered private. Airlines stressed the importance of data protection and privacy. All data stored in the digitized system should be securely stored with industry standard access controls and encryption in transit and at rest.
 - **1.3.1.2:** The digitized system will be considered a critical system so industry-standard methods for managing critical data systems should be practiced. All data should be backed up on a regular basis and recoverable when needed.

1.4: INTEGRATION

Integration allows for seamless data exchange and efficient information flow across different systems. This reduces the need for double data entry which introduces risks in accuracy, timing, and completeness of data. The following integration features were identified by stakeholders:

- **1.4.1:** The digitized system should include an integration platform that supports industry-standard integration methods such as REST API and support secure real-time and batch file transfers.
- **1.4.2:** The digitized system should provide an interface for airlines to send digital information such as daily passenger counts and data to reconcile compliance. An option should be provided for airlines to

interface with the digitized system in real time if they choose to embed parts of the digitized process within their airline systems.

- **1.4.3:** The digitized system should integrate with HDOA and DBEDT systems to share data that is collected in the digitized system. These systems include the HDOA Animal Quarantine Information System (AIS) and the DBEDT SPSS data processing and reporting system.

1.5: INFRASTRUCTURE

The infrastructure of a digitized system provides the data center, network connectivity, compute environment, and storage resources to operate the system. The following infrastructure related requirements were identified:

- **1.5.1:** The infrastructure for the digitized system should be managed by the State.
- **1.5.2:** Connectivity to the digitized system should be over the public Internet such as mobile carriers, homes, and Wi-Fi networks at airports and in flight.
- **1.5.3:** The digitized system should be hosted and managed in a secure, highly available and scalable cloud environment with redundant data centers, networks, and compute environments with disaster recovery.

1.6: SYSTEM MAINTENANCE & OPERATIONS (M&O)

System M&O refers to the ongoing services to maintain and operate a digitized system. These services include technical help desk, support, software maintenance, change management, incident management and response, data back up and record, and disaster recovery. The following M&O requirements were identified:

- **1.6.1:** The digitized system should be maintained and regularly updated with software fixes, security patches, and new feature releases following industry-standard continuous integration/continuous deployment DevOps processes.
- **1.6.2:** The ongoing operations of the digitized system should include managed services to manage the cloud environment, monitor performance and service level agreements, provide support, and perform root cause analysis.
- **1.6.3:** M&O of the digitized system should ensure the security and reliability of the network infrastructure by implementing robust security measures, managing firewalls, conducting regular vulnerability assessments, and responding to security incidents.

- **1.6.4:** The digitized system should implement data backup strategies, perform regular backups, and provide recovery services in the event of data loss or system failures.
- **1.6.5:** Technical support services to address IT-related issues, troubleshoot problems, and provide assistance with software applications and devices should be provided.

2: OPERATIONAL WORKFLOW MODEL (OWM)

The Operational Workflow Model is a diagram that represents the process flows of the digitized system before, during, and after the flight. Each primary Traveler Workflow in the diagram represents a person, entity, or system that is involved in the process. The Operational Workflow Model is used to perform operational feasibility analysis. In addition to the primary Traveler Workflow, additional workflows are included to represent options for compliance and enforcement, hybrid paper process, and tourism surveys.

The Operational Workflow Model shown on the next page represents a conceptual process flow for the digitized system before, during, and after a flight. The workflow starts with making the traveler aware of the digitized system through awareness campaigns and airline/tour group pre-travel notifications. The traveler then accesses the digitized system and completes the forms from home, at the airport, or in flight. Data is analyzed for travelers that require inspection and HDOA inspectors are notified on their mobile devices. Data from airlines is received and integrated with HDOA and DBEDT systems. Optional workflows for handling compliance and enforcement include checkpoint screening stations, data reconciliation, and honor-based system. Optional workflows for maintaining both a digitized and paper process and capturing tourism survey data are also included.

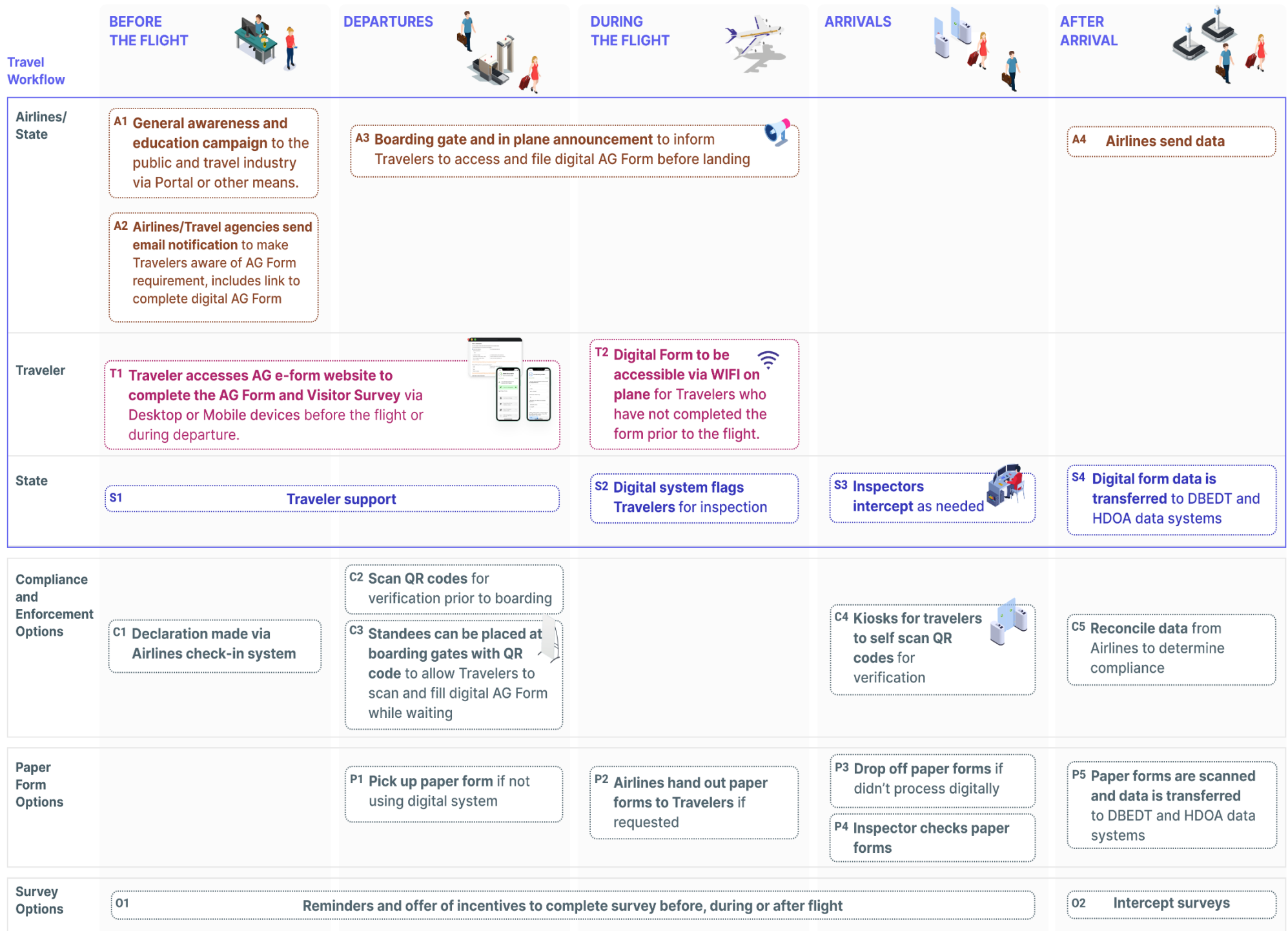


Figure 2: Operational Workflow Model

2.1: TRAVEL WORKFLOW

The travel workflow describes the steps involved in a flight to Hawai'i prior to departure, during boarding, on the flight, and after arrival.

Before the Flight

- **2.1.1: Awareness Campaigns and Airline Notifications:** Awareness campaigns should be conducted to educate the traveler on the requirement to complete the digitized In-flight Form prior to travel. Many stakeholders expressed the importance of educating the travelers to minimize confusion and support during the travel workflow. Some stakeholders suggested offering incentives such as coupons, discounts, and access to a "fast lane" through checkpoints if used. Other suggestions were to provide informational content about Hawai'i's fragile natural ecosystems and the importance of protecting them and information about the agricultural declaration laws and penalties.

The traveler will also receive pre-travel notifications from airlines and travel agents with links to the digitized system portal. Some airlines can offer "deep links" to pre-fill form data to simplify the process for the traveler.

- **2.1.2: Traveler Accesses Portal:** The traveler will access the digitized system through a mobile app, published URL, internet search, or links embedded in airline/travel agent pre-travel notices.
- **2.1.3: Traveler Completes Agricultural Declaration Form and Tourism Survey:** The traveler will follow the instructions and complete the digitized agricultural declaration and optional tourism survey forms prior to travel.
 - **2.1.3.1: Agricultural Declaration Form:** Airline and State stakeholders have expressed the importance of completing the form prior to departure to allow time to plan resources and avoid delays and confusion during check-in and at departure gates.

The question about how far in advance the form could be completed was not answered because the current law is specific to the In-flight Form and assumes the form is completed during the flight. Most stakeholders felt the traveler should be allowed to complete the form at least 24 hours in advance. Restricting forms to be filled out during check-in, at departure gates, and in-flight will cause congestion, confusion, and disruption to people traffic flows at the airport and on board the aircraft.

- **2.1.3.2: Tourism Survey:** Traveler completes the optional tourism survey form prior to travel. Many stakeholders expressed concerns about how a digitized system would impact the data that is currently collected through the paper process. The current tourism survey is attached to the mandatory agricultural declaration form that is passed out to all travelers during the flight, which increases participation. An optional tourism survey that is part of a digitized

system may negatively affect the level of participation. Many public and private organizations rely on the data collected from the tourism survey for planning and decision making.

Many stakeholders expressed the importance of this tourism survey data to the State. As quoted from the December 2019 HDOA report to the Legislature, "the In-flight Form has been an extremely effective survey instrument for the Domestic Visitor Survey for more than 20 years. The 3.7 million forms collected and processed in 2018 is a tremendous sample size. Sample size going back to 2000 have been above 3.0 million forms processed per year." In addition to these statements, many stakeholders including DBEDT, HTA, economists, and vendors confirmed the importance of maintaining the ability to collect the in-flight tourism survey data through a digitized system or other channels. Downstream data collection activities such as the Visitor Satisfaction and Activity Survey (VSAT) will also be affected due to reliance on data such as email addresses from the In-flight Form.

- **2.1.4: Assist Travelers:** Some travelers may need assistance with the digitized system while online, at the airport, or in-flight. Call center and in-person support resources will be required with clear procedures and protocols, roles and responsibilities, and training provided.

Day of Departure

- **2.1.5: Declaration During Airline Check-In:** As an alternative to completing the agricultural declaration part of the digitized form, some stakeholders preferred that it be embedded within the airline check-in process to make it simpler for the traveler and to obtain 100% compliance.

All airlines express their concerns with this method because it is cost prohibitive to modify individual airline systems and it introduces risks in system impact, delays, and disruptions during the check-in process. A smooth and efficient process during check-in and while boarding is critical to ensure safe and secure operations for all parties including the passengers, airlines, airports, and TSA.

- **2.1.6: Airport Announcements to Complete the In-Flight Form:** Announcements would be made to inform travelers about completing the digitized In-flight Form prior to departure. The traveler will follow the instructions and complete the digitized agricultural declaration form and optional tourism survey using cellular data or the airport's Wi-Fi prior to boarding.

During Flight

- **2.1.7: In-flight Announcements to Complete the In-Flight Form:** Announcements would be made during the flight to inform travelers about completing the digitized In-flight Form prior to arrival. The traveler will follow the instructions and complete the digitized agricultural declaration form and optional tourism survey using the airline's Wi-Fi prior to landing.

At Arrival

- **2.1.8: Process Agricultural Declaration and Tourism Survey Data:** Data from the digitized agricultural declaration form and tourism survey will be processed and made accessible to HDOA Plant and Animal Industry staff prior to arrival. Advanced notice allows HDOA to better plan and manage resources that will be needed upon arrivals. Information provided in the tourism survey may also be used to locate and identify passengers that have declared plants and/or animals. Passengers that require inspection are identified based on business rules defined by HDOA.
- **2.1.9: Conduct Inspections:** Agricultural inspectors would use a mobile device to access a list of digitized forms completed by passengers for each flight in advance of the plane's arrival.

Travelers that declare agricultural products or animals will be digitally flagged for the HDOA inspector to take appropriate action. Inspectors can also access agricultural declaration and tourism survey data from their mobile device to make airport announcements to locate travelers.

After Arrival

- **2.1.10: Transfer Post Arrival Airline Data:** Data required from airlines such as passenger counts and reconciliation data will be transferred to the digitized system through system interfaces.
- **2.1.11: Transfer Tourism Survey and Agricultural Declaration Data:** Completed tourism surveys and associated flight information would be sent to DBEDT's contractor via a file transfer to their SPSS data processing and reporting system. Data will also be transferred to other systems such as the Animal Quarantine Information System (AIS).

2.2: COMPLIANCE AND ENFORCEMENT OPTIONS

Perspectives on compliance and enforcement varies widely among stakeholders, ranging from checkpoints and scanners at departure and arrival gates to an honor system with education and announcements at gates and in-flight to explain the laws and importance of protecting Hawai'i.

- **2.2.1: Checkpoint with Scanners at Departure Gates:** If compliance checks are done at departure, travelers would be issued a QR code upon completion of the digitized In-flight Form. The QR codes can be scanned at departure checkpoints to show proof of compliance. Resources would be required at checkpoints and passenger flow will be impacted by introducing another step prior to boarding the aircraft.
- **2.2.2: Checkpoints with Scanners at Arrival Gates:** With this option, travelers would be issued a QR code upon completion of the digitized In-flight Form. The QR codes can be scanned at arrival checkpoints to show proof of compliance. Resources would be required at checkpoints and passenger flow will be impacted by introducing another step after disembarking the aircraft. Airlines have

expressed that travelers are tired after a long flight and want to quickly get out of the airport and to their destination.

- **2.2.3: Data Audits and Reconciliation:** This method would require airlines to share data about passengers on the flight to reconcile with passengers that completed the digitized form. All airlines expressed privacy and security issues in sharing passenger data.
- **2.2.4: Honor System with Random Audits:** This method would rely on educating travelers about State laws and the importance of protecting Hawai'i through marketing campaigns and gate and in-flight announcements. Some stakeholders suggested offering incentives to encourage compliance or to make it part of a potential Green Fee that may be imposed on visitors traveling to Hawai'i.

It is important to note that all these options will require additional analysis and changes to statutes that define compliance based on the paper In-flight Form.

2.3: PAPER FORM OPTION

Some stakeholders expressed the importance of maintaining a paper option for those who are not comfortable or are unable to use the digitized system. The following options were suggested:

- **2.3.1 Paper Forms on Aircraft:** This option will require airlines to continue handling paper forms during the flight. Airlines were generally opposed to this option since it places an additional burden on the airlines to handle both paper and digitized In-flight Forms. Determining who completed the form digitally or on paper would be operationally problematic for airlines to administer.
- **2.3.2 Paper Forms at Departure and Arrival Gates:** Airlines preferred that the paper form be provided by the State at the departure and arrival gates rather than requiring airlines to maintain a supply of paper forms on the flights and having to train staff on both paper and digital processes. Completed paper forms would need to be collected and reviewed upon arrival which creates operational challenges for HDOA inspectors.
- **2.3.3 No Paper Option:** Some stakeholders felt strongly that a paper option should not be offered due to the added costs to maintain both paper and digital methods and the operational complexities of handling both methods. They also cited the trend towards digital becoming the normal way of doing business. Other stakeholders felt that the paper option should be available to provide equal access to those not comfortable with adopting digital methods.
- **2.3.4 Hybrid Processing:** If the paper form is maintained, forms will be scanned and processed following the current process, and the data would be merged into DBEDT's SPSS data warehouse along with the digital form data.

2.4: TOURISM SURVEY OPTIONS

The following options were discussed with stakeholders as possible ways to encourage travelers to complete the tourism survey:

- **2.4.1 Integrated with Agricultural Declaration Form:** The optional tourism survey could be designed so it can be integrated with the agricultural declaration form to encourage participation. As an example, the agricultural declaration form and tourism survey could be a scrollable web page rather than requiring additional clicks to access a tourism survey.
- **2.4.2 Promotions and Special Offers:** Some stakeholders felt that participation in the tourism survey could be encouraged by special offers or incentives. Including information about Hawai'i that travelers find useful would be another form of incentive. With availability of in-flight Wi-Fi access, the traveler could access information about Hawai'i and complete the tourism survey during the long trip to Hawai'i.
- **2.4.3 Intercept Surveys and Other Methods:** If the agricultural declaration form and tourism survey were separated, the only alternative data collection mentioned by stakeholders as remotely feasible is an intercept methodology. These surveys would be costly if attempting to reach similar sample sizes as what is gathered by the In-flight Form currently and would present other potential negative impacts to comparability with prior data.

3: SYSTEM IMPLEMENTATION MODEL (SIM)

3.1: COMMON IMPLEMENTATION APPROACHES

The System Implementation Model describes the general approach for how a digitized system could be implemented. Various approaches to system implementation are taken depending on various factors such as organizational readiness, complexity, scope of the system, time constraints, and budgets. The following are examples of common implementation approaches:

- **3.1.1: Pilot Implementation:** In pilot implementation, a small-scale version of the system is deployed and tested in a limited environment or with a subset of users. It allows for early feedback, testing, and learning before rolling out the system to the entire organization. This approach is useful when the system's impact and risks need to be assessed before full-scale deployment.
- **3.1.2: Big Bang Implementation:** Big bang implementation involves introducing the new system all at once, replacing the existing system entirely. In this approach, the old system is shut down and the new system is implemented and made available to all users simultaneously. It requires careful planning and thorough testing to minimize disruptions and ensure a smooth transition.
- **3.1.3: Phased Implementation:** Phased implementation involves implementing the new system in stages or phases. Each phase focuses on specific modules, functionalities, or user groups. This approach allows for a gradual transition, with the new system being incrementally introduced while the old system is still operational. It provides more flexibility and reduces the risks associated with a big bang implementation.
- **3.1.4: Parallel Implementation:** In parallel implementation, both the old and new systems are run simultaneously for a period of time. The new system is gradually tested and refined until it is deemed stable and reliable, after which the old system is phased out. This approach ensures a safety net by allowing users to fall back on the old system if any issues arise.

The choice of implementation approach depends on factors such as project complexity, organizational readiness, user impact, and available resources. Each approach has its advantages and challenges, and the selection should be based on careful consideration of the project's requirements and constraints.

The System Implementation Model was considered in the operational and financial feasibility analysis.

3.2: IMPLEMENTATION CONSIDERATIONS

This System Implementation Model reflects the feedback that stakeholders shared about how the digitized In-flight Form should be implemented. The majority of stakeholders favored an incremental approach rather than a single "big bang" event to implement a digitized system. This approach typically will include an initial proof of concept phase to validate the digitized system and test candidate solutions and technologies. A pilot phase is conducted to test the system for a subset of users to obtain feedback and lessons learned that are then used to refine the system. The final phase is a full-scale production implementation of the refined system.

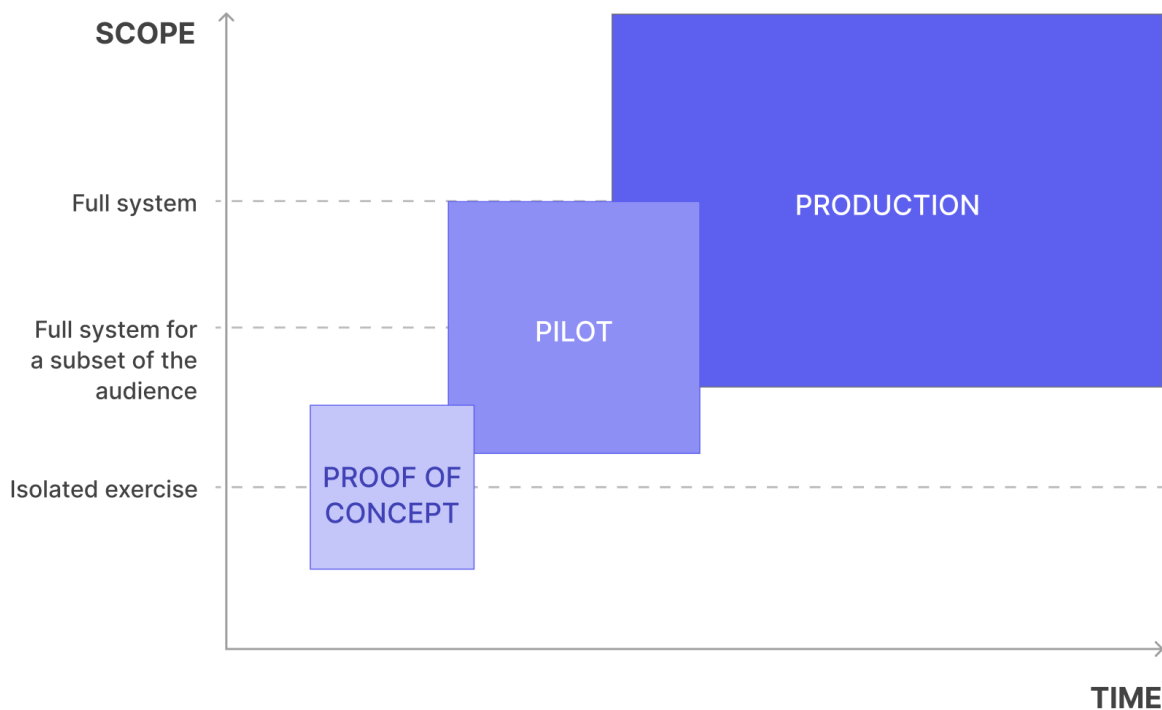


Figure 3: System Implementation Model

- 3.2.1 Incremental Approach:** Many stakeholders advised that initial proof of concept and pilot programs be conducted to validate concepts, refine the system, and obtain lessons learned prior to a full-scale rollout. Some airlines expressed willingness to participate in initial proof of concepts and pilot programs with the State using selected flights or routes. Their expectation is the pilot program will be limited in duration and will eventually result in the full implementation of a digitized system.
- 3.2.2 Policies and Procedures Considerations:** The current law is written specifically for the paper In-flight Form so changes in the statutes will be needed if the form is digitized. The changes should address the time window that is allowed to declare prior to flight, responsibilities for all parties, and how compliance and enforcement will be handled.

FEASIBILITY ANALYSIS

4: TECHNICAL FEASIBILITY

To analyze the technical feasibility of digitizing the In-flight Form, each component of the Digitized System Model was analyzed to determine whether the solution could be reasonably developed using commercially available technologies and methods. Alternative options were also analyzed and potential issues were identified for further consideration with stakeholders.

Each component was assigned a technical feasibility score from 1-5, ranging from least feasible to highly feasible using the following criteria:

1. **Not technically feasible:** The solution is not technically possible or achievable given the current technology, resources, or constraints.
2. **Low technical feasibility:** The solution is technically challenging and would require significant modifications, resources, or investments to be implemented successfully.
3. **Moderate technical feasibility:** The solution is technically possible but may require some customizations, enhancements, or additional resources to achieve the desired outcome.
4. **High technical feasibility:** The solution is technically sound and feasible with configuration changes and can be implemented using available technology and resources.
5. **Very high technical feasibility:** The solution is well within the technical capabilities and resources available, requiring minimal modifications or investments for successful implementation.

In summary, digitization of the In-flight Form was found to be technically feasible. Many of the components identified in the Digitized System Model are achievable with current technologies, infrastructure, software frameworks, and methodologies. According to the In-flight Form Digitization Survey, 92% of travelers had at least one person with a smartphone with Internet access that can access a digitized system. The integration component was ranked lower in technical feasibility due to conflicting perspectives among stakeholders regarding data to be shared, methods of integration, and capabilities of modifying airline systems. Additional discussions with stakeholders will be necessary to resolve these integration issues.

A summary of the technical feasibility analysis is shown in the chart on the following page.

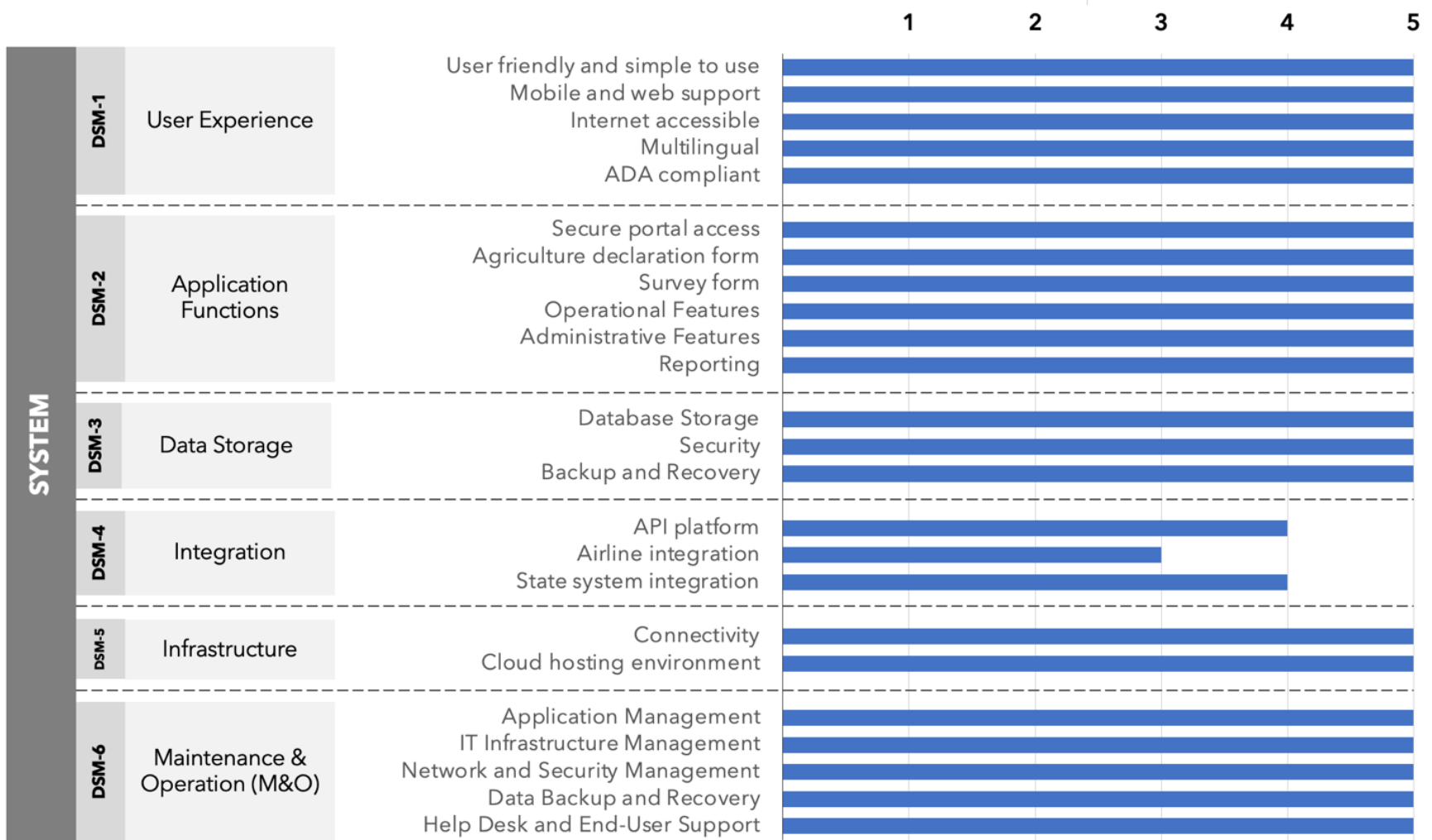


Figure 4: Summary of Technical Feasibility Components

4.1: SYSTEM MODEL – USER EXPERIENCE

4.1.1: User-Friendly and Simple to Use



The digitized system should be very simple to use and easily accessible. User interface/user experience (UI/UX) design is an essential part of developing user-friendly software by focusing on the needs and expectations of the users. Considering the scope of the digitized system is for two basic forms, developing a simple-to-use application is technically feasible and is commonly achieved by the following methods:

- **User Research:** UI/UX designers conduct user research to understand the target audience, their goals, behaviors, and preferences. This research helps in identifying user needs and pain points and designing solutions that address them effectively.
- **User-Centric Design:** UI/UX designers follow a user-centric approach, prioritizing the needs and goals of the users throughout the design process. They create personas, user flows, and user journeys to map out the user's interactions with the software, ensuring that the design is intuitive and aligns with their expectations.
- **Wireframing and Prototyping:** UI/UX designers create wireframes and interactive prototypes to visualize and test the software's interface and functionality. These low-fidelity representations allow designers to iterate and gather user feedback early in the process, making necessary improvements before the development stage.

By incorporating UI/UX principles and methodologies into software development, designers can create intuitive, engaging, and user-friendly software that meets the needs and expectations of its intended users. This, in turn, enhances user satisfaction, promotes adoption and usage, and ultimately contributes to the success of the software.

4.1.2: Mobile and Web Support



The digitized system can be developed to support mobile and web interfaces using the Responsive Web Design (RWD) approach, which allows the forms and other functionalities to be responsive with different devices and screen sizes and orientations. Native mobile applications for iOS and Android could also be developed from a single code base using multi-platform software development tools.

Airlines have mentioned a growing adoption of their mobile platform and a trend towards less paper boarding passes. Some airlines are predicting that airport kiosks may not be needed in the future as mobile

devices become more ubiquitous and travelers become more comfortable with the technology. This trend is supported by our In-flight Form Digitization Survey that shows 92% of travelers have at least one individual in their party who possess a smartphone with Internet access.

4.1.3: Internet Accessible



Internet connectivity to access the digitized system is widely available and familiar to most travelers. According to our In-flight Form Digitization Survey, 92% of travelers have at least one individual in their party who possess a smartphone with Internet access.

During the interviews, most airlines have stated that Internet connection to the digitized system web page could be made available through their free, in-flight Wi-Fi system by whitelisting the URL of the website. Some airlines have mentioned a trend towards providing travelers with in-flight Internet access. The availability of Internet bandwidth varied by airlines. Some airlines felt that bandwidth demands while accessing the digitized system would not be a problem since the networks will be designed for streaming videos, particularly if forms are allowed to be completed prior to the flight. Other airlines felt that high utilization at one time would bog down the network. In general, all airlines felt that the trend is toward offering high speed Internet access.

4.1.4: Multilingual



Multi-language capability is available with customization and internationalization (i18N) frameworks. Application updates include content changes that will require updates to language resources file. The solution can be designed to support language changes/updates in configuration rather than hard coding each page.

A.I. translation is also available with varying quality depending on the language. This is expected to improve in the future with advancements in A.I. technologies.

4.1.5: ADA Compliant



ADA compliance is a normal requirement for government websites and refers to the guidelines and standards set forth by the Web Content Accessibility Guide (CAG) developed by the World Wide Web Consortium (W3C). These guidelines aim to ensure that websites are accessible to individuals with disabilities, providing equal access to information and functionality.

4.2: SYSTEM MODEL – APPLICATION FUNCTIONS

4.2.1: Secure Portal Access



A secure portal requires each user to register for an account with a user ID and password. Multi-factor authentication is commonly enforced through email or a mobile phone number. Access control features restrict the user to only authorized content in the portal. This is a common component of all secured websites, such as e-commerce, banking, healthcare, and government sites, and is familiar to the public.

Non-registered access is also technically feasible to provide a quick method to complete the agricultural declaration form and tourism survey without registering.

4.2.2: Agricultural Declaration Form



The agricultural declaration form portion of the In-flight Form is a single page with approximately 20 text-only fields. Some form of digital signature will be required to attest to the information being provided is truthful and accurate. This type of form is common in most web and mobile applications and is technically feasible.

4.2.3: Tourism Survey



The tourism survey portion of the In-flight Form is a single page with approximately 15 questions. This is not mandatory so no attestation is required. This type of form is common in most web and mobile applications and is technically feasible.

4.2.4: Operational Features



Operational features to support the digitized program such as super user access, QR code scanning, management reporting, etc., are common in most applications and is technically feasible.

4.2.5: Administrative Features

Feasibility Score



Administrative features to administer the digitized system such user account management, configurations, table updates, and dashboards are common in most applications and is technically feasible.

4.2.6: Reporting

Feasibility Score



Data analysis and reporting tools are readily available from cloud platforms and third-party vendors.

4.3: SYSTEM MODEL - DATA STORAGE

4.3.1: Database Storage

Feasibility Score



Data storage requirements for the agricultural declaration form and tourism survey are expected to be minimal based on the 5GB per year estimates. Cloud database platforms that support this annual volume are highly available.

4.3.2: Security

Feasibility Score



Data security features such as end-to-end encryption and database encryption are considered best practices in application development and are highly technically feasible.

4.3.3: Backup and Recovery

Feasibility Score



Data protection services such as backup and recovery are standard practices and highly available in cloud platforms.

4.4: SYSTEM MODEL - INTEGRATION

4.4.1: Application Programming Interface (API) Platform



Integration platforms that allow data sharing and system-to-system integration are readily available and are technically feasible. These platforms require configuration to set up but will support one-to-many integrations vs. one-to-one without an API platform.

4.4.2: Airline Integration



Integration with airlines could range from basic file transfers to real-time API integration with airline core systems.

Basic file transfer integration is technically feasible assuming appropriate data sharing agreements are in place. Real-time integration with airline core systems is more complex and thus face technical challenges. Most airlines raised technical issues with integrating their systems with the digitized system. The technical issues are related to making changes to core systems that are mission critical, difficult to modify, cost prohibitive, and require lengthy approvals and lead times to accomplish. Some airlines expressed a willingness to explore options that improve the experience of their customers. Providing an option to integrate through a published API is technically feasible on the State side although it may not be feasible on the airline side.

4.4.3: State System Integration



State system integration allows data from the agricultural declaration form and tourism survey to be transferred or shared with DBEDT and HDOA systems. These system interfaces may be accomplished in batch or through an API and are common between systems within and among State departments.

4.5: SYSTEM MODEL – INFRASTRUCTURE

4.5.1: State-Managed Environment



The digitized system would operate in a cloud environment managed by the State. This is highly technically feasible since most State systems operate in this State-managed model either internally or through outsourced vendors.

4.5.2: Connectivity



Internet connectivity to access the digitized system is widely available and familiar to most travelers. During the interviews, most airlines have stated that Internet connection to the digitized system web page could be made available through their free, in-flight Wi-Fi systems by whitelisting the URL of the website. Some airlines have mentioned a trend towards providing travelers with in-flight Internet access, including free Internet with some airlines. Some airlines felt that bandwidth demands while accessing the digitized system would not be a problem, particularly if forms are completed prior to the flight. Other airlines were concerned about bandwidth if everyone on the flight used the system at the same time. According to most airlines, the general trend is to increase the bandwidth and availability of in-flight Wi-Fi services.

The In-flight Form Digitization Survey results show a significant number of travelers have cellular data (77%) or Wi-Fi (91%) access and 76% of those polled prefer completing the forms on a mobile device. These figures are consistent with the growing adoption of digital technologies reported by the airlines and suggest technical feasibility for this component.

4.5.3: Cloud Hosting Environment



A cloud hosting environment refers to a scalable and flexible infrastructure that enables businesses to host and manage their applications, websites, and data in a virtualized environment. It leverages cloud computing technologies to provide reliable, on-demand access to computing resources such as servers, storage, and networking. Compared with on-premise infrastructure, cloud hosting environments require less resources and no capital investments to purchase and maintain hardware, network, and software. It can also provide multiple highly-secured data centers, high availability, and disaster recovery features that would be cost-probative to develop internally.

Cloud hosting environments are highly suitable for the digitized system. Its low upfront costs and scalable capacity and pricing fits nicely with a pilot implementation approach. This component is highly technically feasible and readily available from major cloud vendors like Google, Microsoft, AWS, and IBM.

4.6: SYSTEM MODEL – MAINTENANCE & OPERATIONS (M&O)

M&O is a requisite component of any digitized system and commonly fulfilled by internal staff or externally-sourced managed services providers (MSP).

4.6.1: Application Management



This component is technically feasible and should be included in the scope of the digitized system as an ongoing requirement.

4.6.2: IT Infrastructure Management



This component is technically feasible and should be included in the scope of the digitized system as an ongoing requirement. Cloud infrastructure management is commonly included in cloud services offerings.

4.6.3: Network and Security Management



This component is technically feasible and commonly included in cloud services offerings.

4.6.4: Data Backup and Recovery



This component is technically feasible and commonly included in cloud services offerings.

4.6.5: Help Desk and End-User Support

Feasibility Score



This component is technically feasible and should be included in the scope of the digitized system as an ongoing requirement. The State may be able to leverage existing resources that support other State systems to fulfill this requirement.

5: FINANCIAL FEASIBILITY

The Digitized System, Operational Workflow, and System Implementation Models were used to analyze the financial feasibility of a digitized system. Components of each model that require one-time or ongoing financial investments were analyzed to estimate its costs, consisting of both low and high estimates due to the range of options and considerations. Certain assumptions were made to establish a baseline for estimating the costs, e.g., the level of desired compliance (i.e., 0% or 100%), or whether any paper would still be used in the new program. Furthermore, factors used to calculate the costs were pulled from publicly referenceable sources – the State of Hawai'i's Safe Travels program, which was a multilayered process designed to protect the health and safety of our visitors and residents from the spread of COVID-19. Safe Travels was referenced in a number of instances due to its use of a digital application that was developed by the State, 100% compliance enforcement mechanisms, and support functions similar to the requirements of a digitized In-flight Form.

The following tables show summaries of projected costs – details and considerations used in developing the estimates are provided later in this section of the analysis.

| CURRENT PROCESS COSTS | |
|------------------------------------|---------------------|
| Component | Total Cost (Annual) |
| In-flight Form Printing & Delivery | \$274,857 |
| Envelope Printing | \$15,315 |
| FedEx Delivery to HDOA | \$1,000 |
| Scanning, Processing, & Tabulating | \$323,385 |
| TOTAL | \$614,556 |

| PROJECTED DIGITIZATION COSTS | | | | |
|---|------------------|--------------------|--------------------------|--------------------|
| Component | Initial Costs | | Recurring Costs (Annual) | |
| | Low | High | Low | High |
| Application Development (User Experience, Process and Data, Integration) | \$500,000 | \$2,200,000 | - | - |
| Infrastructure | - | - | \$24,000 | \$48,000 |
| System Maintenance & Operations | - | - | \$100,000 | \$660,000 |
| Communication & Education | \$25,000 | \$200,000 | \$0 | \$1,000,000 |
| Digitized System Operations | - | - | - | \$900,000 |
| Digitized System Helpdesk & Support | - | - | \$351,000 | \$1,100,000 |
| Hybrid – Maintain Paper Form | - | - | - | \$122,911 |
| TOTAL | \$525,000 | \$2,400,000 | \$475,000 | \$3,830,911 |

In summary, the one-time and recurring costs can vary significantly depending upon the scope, policy, and overall vision of the digitized traveler program. As such, it is important to note the importance of defining and documenting these driving factors that will impact budget for planning purposes.

| PROJECTED COSTS TO CONDUCT TOURISM SURVEY AS INTERCEPT | | | | |
|--|------------------------------------|------|--------------------------|-------------|
| Component | Initial Costs | | Recurring Costs (Annual) | |
| | Low | High | Low | High |
| Separate Tourism Survey Conducted using Intercept Methodology | Included in Annual Vendor Contract | | \$2,121,600 | \$4,243,200 |

Separating the agricultural declaration form and tourism survey and conducting the tourism survey using an intercept methodology would not substantially change the Projected Digitization Costs. Thus, the costs for conducting the tourism survey as an intercept survey are shown independently.

The cost of conducting an intercept survey to gather even a small percentage of the 400,000 completed forms that are currently collected would be substantial. Assuming that the survey would be developed and executed by a professional market research vendor, as is the case with the DBEDT Visitor Departure Survey, the annual contract would include all initial costs for survey development, printing, training, etc. Thus, only recurring costs are shown. Costs are estimated above based on collecting 20,000 - 40,000 responses per month (5% - 10% of the current volume) at an estimated cost of \$8.84 per survey, which is the current per unit expense for the 2022 DBEDT Visitor Departure Survey.

5.1: SYSTEM MODEL - APPLICATION DEVELOPMENT

| Component | Initial Costs | | Recurring Costs (Annual) | |
|---|---------------|-------------|--------------------------|------|
| | Low | High | Low | High |
| Application Development (User Experience, Process and Data, Integration) | \$400,000 | \$2,200,000 | - | - |
| COMMENTS: The quoted low-end for fixed cost is based on an estimate given by Google to develop a similar application as shared in an interview with a State senator. The high-end cost comes from the CIO Annual Report for Safe Travels, July 7, 2021. | | | | |

Application development includes software licensing or development of a custom digitized system and implementation services to plan, design, develop, test, and install the system.

The costs to build and implement a digital system will vary depending upon a number of different architectural considerations, e.g., back-end design, front-end design, database design, type and number of user interfaces, mobile application vs. web application, number of external system integrations, etc. The low- and high-cost estimates were based upon an estimate shared by one of the State legislators provided from Google (low), and actual development costs from the Safe Travels app (high). The Safe Travels app costs were used to reflect what the costs could be to build a system that supports a scenario

where there is a desire for 100% compliance, which was the case under the Safe Travels program. There may be other costs not included in either of these financial assumptions that need to be considered (e.g., ongoing licensing costs, product enhancements, and third-party integration costs).

5.2: SYSTEM MODEL - INFRASTRUCTURE

| Component | Initial Costs | | Recurring Costs (Annual) | |
|---|---------------|------|--------------------------|----------|
| | Low | High | Low | High |
| Infrastructure | - | - | \$24,000 | \$48,000 |
| COMMENTS: <u>Considering:</u> <ul style="list-style-type: none"> - 5GB of data storage a year (DSM-3) - 3.7m forms submitted a year (2018 data) - 4m requests per month (all apps) - Typical services need for a WebApp: AppService, Storage, Database, CDN, Cloudwatch (monitoring services), Auth and Authorize services - 4 environments (DEV, TEST, STAG, PROD) Cloud services cost calculators are published by Major cloud provider (DSM-5) https://calculator.aws/#/estimate?id=6c3219b5e26aa79d8db55f0a11d8e99b966945f8 | | | | |

Infrastructure includes the costs of cloud environment, including network, storage, computer, database, application, administration, and management services.

A cloud infrastructure would be a strong consideration given the many user groups, need for mobility and transferability of data, and security/privacy needs. Similar to the application development costs, the infrastructure costs will vary depending upon the architecture of the entire system. Given the estimated number of users based on historical forms submitted, a low and high estimate can range anywhere from a low of \$2,000/month to a high of \$4,000/month.

5.3: OPERATIONS MODEL - SYSTEM MAINTENANCE & OPERATIONS (M&O)

| Component | Initial Costs | | Recurring Costs (Annual) | |
|---|---------------|------|--------------------------|-----------|
| | Low | High | Low | High |
| System Maintenance & Operations | - | - | \$100,000 | \$660,000 |
| COMMENTS: 20% (low) to 30% (high) of development costs. | | | | |

System M&O includes the cost to maintain and manage the digitized system.

The industry standards for calculating M&O costs of developing a system vary depending on the type of system being developed. However, some common methods include the cost factor method and the percentage of development cost per year method.

The cost factor method posits that software M&O costs can be predicted as a function of development costs. Generally, this is a percentage of the total software development cost per year multiplied by the number of years in the M&O phase. This percentage can range anywhere from a low of 20% to a high of 30%.

5.4: OPERATIONS MODEL – COMMUNICATION & EDUCATION

| Component | Initial Costs | | Recurring Costs (Annual) | |
|--|---------------|-----------|--------------------------|-------------|
| | Low | High | Low | High |
| Communication & Education | \$25,000 | \$200,000 | \$0 | \$1,000,000 |
| COMMENTS: Initial costs: Message development, production of graphics, signage and even how-to video. Costs vary based on number and complexity of deliverables. Recurring costs: If no changes are made to the materials and partners are reliable in consistently sharing communications to their audiences, recurring costs could be unnecessary. However, if awareness is shown to be low after the initial rollout/announcements, then new creative, increased outreach and even paid media in airport of origin may be needed. | | | | |

Communication and education include the cost of a communications campaign to inform the public of the newly digitized form and maximize participation. Given the relatively short window for completing the form, which based on the research conducted for this study could be as much as 24 hours before departure, a communications and education campaign is likely to be most successful by leveraging earned media and partner communications channels.

The stakeholder interviews identified a number of potential channels for reaching passengers with information about the digitized form through travel partners such as airlines, travel agents, hotels and others. Many who were interviewed expressed willingness to incorporate such messaging into existing communications vehicles.

It would be imperative to ensure consistency in messaging, that a single set of messages be developed and distributed to all stakeholders for delivery to their audiences. This could be limited to messaging alone, but might also include graphics, signage and/or video production.

Assuming communications and education is included in the transition plan, the initial costs are limited on the low-end to message development and basic creative development of graphics and signage, which could be done by a marketing agency for as little as \$25,000. On the high-end, production of a video to show passengers how to access, navigate and complete the form can increase the total cost to as much as \$200,000.

The low-end recurring costs assume no changes are made and the ongoing communications through travel partners are sufficient for raising awareness among travelers, so are projected to be \$0. If no changes are made to the materials and partners are reliable in consistently sharing communications to their audiences, recurring costs could be unnecessary.

However, if awareness is shown to be low after the initial rollout/announcements, then new creative, increased outreach and even paid media in airport of origin may be needed. Therefore, the high-end recurring costs could reach \$1,000,000 per year for new creative development and production and placement of out of home advertising in airports of origin.

5.5: OPERATIONS MODEL - DIGITIZED SYSTEM OPERATIONS

| Component | Initial Costs | | Recurring Costs (Annual) | |
|--|---------------|------|--------------------------|-----------|
| | Low | High | Low | High |
| Digitized System Operations | - | - | - | \$900,000 |
| COMMENTS: Low - 80% Survey of digital users; High - Safe Travels costs from CIO Annual Report July 7, 2021 | | | | |

Digitized system operations include costs of devices and resources to operate the system.

Stakeholders from the airlines and State all suggested the costs to manage and operate a digitized program will depend largely upon the level of compliance desired. As such, the two extreme scenarios would be zero or 100% compliance. Assuming a scenario of zero compliance, the corresponding costs would equate to \$0. A scenario reflecting 100% desired compliance may be similar to the Safe Travels Program. According to the State's Office of Enterprise Technology Services (ETS) January 7, 2021 report, the operating costs to support the Safe Travels Program amounted to approximately \$75,000/month. However, it was noted in the report that this figure only reflected costs from the ETS department and did not include any costs incurred (if any) from the (HDOT) and/or airlines. If those were considered part of the solution, then the costs may be higher.

5.6: OPERATIONS MODEL - DIGITIZED SYSTEM HELPDESK & SUPPORT

| Component | Initial Costs | | Recurring Costs (Annual) | |
|---|---------------|------|--------------------------|-------------|
| | Low | High | Low | High |
| Digitized System Helpdesk & Support | - | - | \$351,000 | \$1,100,000 |
| COMMENTS: Low - 6 FTE \$45K + 30% benefits (2 teams 24/7 coverage); High - Safe Travels costs from CIO Annual Report July 7, 2021 | | | | |

Digitized system helpdesk and support includes costs of call center and in-person support for using the system.

Systems helpdesk and support would most likely be operated by the State and could range from a minimum of a 24/7 two-team, three-shift operations. At the high-end, we used the Safe Travels Program costs to reflect this scenario, which according to the State ETS January 7, 2021 report, these costs amounted to \$1,100,000 for 2020.

5.7: OPERATIONS MODEL - HYBRID

| Component | Initial Costs | | Recurring Costs (Annual) | |
|--|---------------|------|--------------------------|-----------|
| | Low | High | Low | High |
| Hybrid – Maintain Paper Form | - | - | - | \$122,911 |
| COMMENTS: Low - assumes no paper; High - 20% per survey that prefer to use paper | | | | |

Hybrid includes the costs of printing, distributing, scanning, and handling of paper forms.

The two scenarios used to determine the low and high costs to continue using the paper form involved the following:

Low – Assumes 100% transition to a digital solution so therefore, no paper forms required and \$0 in costs would be observed.

High – Uses the survey results that suggest 20% of travelers prefer to use the paper form. Thus, the ongoing costs would be 20% of the current costs to produce and process the paper form. This assumes the entire cost of the existing contract for processing the paper form is variable. Actual costs may be higher due to less volume and potential fixed costs incurred by the vendor.

5.8: OPERATIONS MODEL - TOURISM SURVEY AS INTERCEPT

| Component | Initial Costs | | Recurring Costs (Annual) | |
|---|------------------------------------|------|--------------------------|-------------|
| | Low | High | Low | High |
| Separate Tourism Survey Conducted using Intercept Methodology | Included in Annual Vendor Contract | | \$2,121,600 | \$4,243,200 |
| COMMENTS: Per unit cost of the current DBEDT Visitor Departure Survey is \$8.84. Assumes all costs of the contract are variable. Low - assumes 20,000 completed surveys per month or 240,000 annually. High - assumes 40,000 completed surveys per month, or 480,000 annually. | | | | |

Separating the agricultural declaration form and tourism survey and conducting the survey using an intercept methodology would not substantially change the Projected Digitization Costs. Thus, the costs for conducting the tourism survey as an intercept survey are shown independently.

This approach includes costs for printing, in-person distribution and collection of completed forms at each major airport throughout the State, and processing of paper forms. Estimates are based on the per unit cost of the current DBEDT Visitor Departure Survey that is executed by a local research vendor as an intercept survey of visitors at airport departure gates. This analysis assumes the tourism survey would use a similar systematic sampling of passengers departing on domestic flights at HNL, Kahului, Līhu‘e, and Ellison Onizuka Kona International airports.

Quantity is based on a fraction of the current In-flight Forms collected, which average 400,000 monthly.

Assuming that the survey would be developed and executed by a professional market research vendor, as is the case with the DBEDT Visitor Departure Survey, the vendor would carry within its annual contract all initial costs for survey development, printing, training, etc.

The two scenarios used to determine the low and high costs to conduct the tourism survey as an intercept survey involved the following:

Low – Assumes 5% of the current total of In-flight Forms are collected as intercept surveys, equaling 20,000 per month.

High – Assumes 10% of the current total of In-flight Forms are collected as intercept surveys, equaling 40,000 per month.

6: OPERATIONAL FEASIBILITY

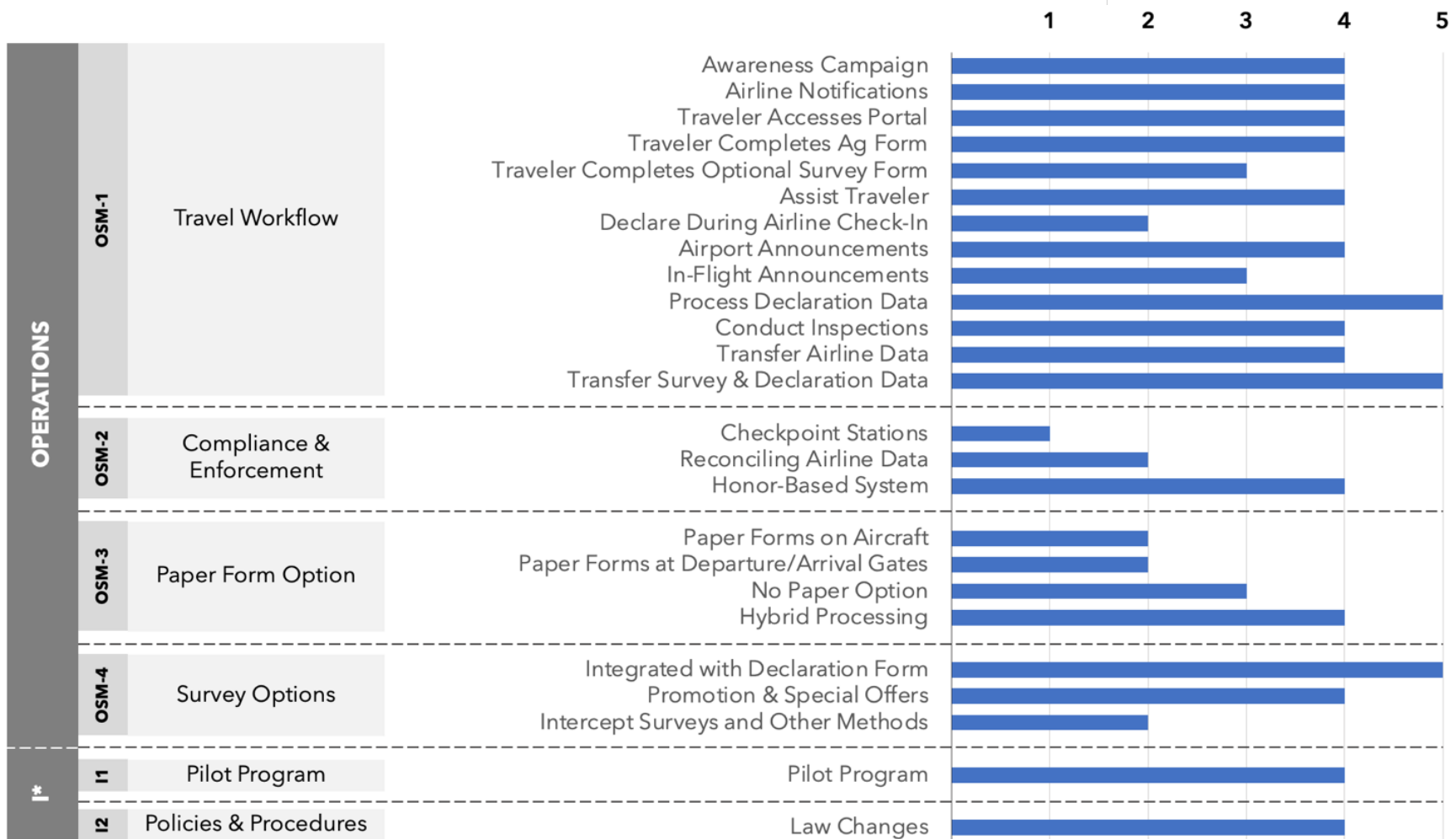
To analyze the operational feasibility of digitizing the In-flight Form, we analyzed each component of the Operational Workflow Model and System Implementation Model to determine whether the solution could be reasonably operated within stakeholder perspectives, resource, budget, policies, and operational constraints. We also analyzed alternative options and identified potential issues for further consideration with stakeholders.

Each component was assigned an operational feasibility score from 1-5, ranging from least feasible to highly feasible using the following criteria:

1. **Not operationally feasible:** The solution is not viable from an operational standpoint and cannot be implemented within the stakeholder perspectives, operational framework, resources, or constraints.
2. **Low operational feasibility:** The solution presents significant operational challenges and would require substantial stakeholder negotiations, resources, or investments to be implemented successfully.
3. **Moderate operational feasibility:** The solution is operationally possible but may require some stakeholder negotiations, process changes, or additional resources to achieve the desired outcome.
4. **High operational feasibility:** The solution aligns well with the existing expertise and operational capabilities and can be implemented with minor adjustments or enhancements. It fits within the available resources and processes.
5. **Very high operational feasibility:** The solution is well-aligned with the stakeholder perspectives, organization's operations, existing resources, and processes. It can be easily integrated and implemented without major disruptions.

In summary, the operational feasibility of digitizing the In-flight Form varied for different components of the Workflow Operational Model. In general, the overall process of notifying travelers, completing the digitized agricultural declaration form and tourism survey, conducting inspections, and compiling data is considered operationally feasible. Many of these components were ranked as moderate to high in operational feasibility. However, certain components were ranked low to moderate due to conflicting perspectives among stakeholders regarding compliance and enforcement, maintaining a paper form option, and sharing of airline data. There was also significant concern about the operational feasibility of maintaining the current sample size for the tourism survey. Additional discussions with stakeholders will be necessary to resolve these issues.

A summary of the operational feasibility analysis is shown in the chart on the next page.



I*: Implementation

Figure 5: Summary of Operational Feasibility Components

6.1: OPERATIONS MODEL – TRAVEL WORKFLOW

6.1.1: Awareness Campaign



The State would develop a marketing campaign to make the traveling public aware of the digitized system. This would include integration with existing communication channels, partner communications channels and could include advertising, Internet search tags, and other paid channels. This is operationally feasible within budget constraints since the State has resources and experience with marketing programs targeting travelers and visitors to Hawai'i.

6.1.2: Airline Notifications



Airlines would modify their systems to include notifications with links to the digitized system. Many airlines have said it is technically and operationally feasible for them to implement this feature if sufficient information and advanced notice is provided.

Most airlines have said embedding links to the State's digitized system portal in their pre-travel notices would be feasible, including embedded data to pre-fill forms if security and privacy issues are resolved. Airline pre-travel notices are possible for passengers that book their flight through the airline or partner travel sites. Passengers who book their flights through other means, such as non-partner travel agencies or tour groups, receive pre-travel notices from the travel agencies. Those agencies would have to include information about the digitized system process through their communication channels, which poses some operational challenges since it will be difficult to identify and coordinate with all the travel agencies. The State may need to rely on general awareness campaigns to reach these travelers.

6.1.3: Traveler Accesses Portal



Access to a digitized system portal is operationally feasible and could be facilitated through Internet searches, marketing campaigns to educate the traveling public, and by embedded links in airline pre-travel communications. Other considerations include:

- 6.1.3.1 Communication Lessons from Safe Travels:** The State will need to communicate and coordinate with all parties involved to ensure the traveler is notified or aware of the need to complete the form digitally. Questions about how to handle travelers that do not have a digital device to access the system, are uncomfortable and not proficient with technology, or are not willing to use the digital

system will need to be addressed. Valuable lessons were learned from Safe Travels during Covid including operational challenges and issues, resource and budget requirements, and airline and public feedback.

- **6.1.3.2 Online Accessibility:** The In-flight Form Digitization Survey results show a significant number of travelers have cellular data (77%) or Wi-Fi access (91%) and 76% of those polled prefer completing the forms on a mobile device. These figures are consistent with the growing adoption of digital technologies reported by the airlines.
- **6.2.3.3 Quick Form:** To improve operational feasibility, a quick form should be designed into the digitized system to allow a declaration form to be completed quickly without registration. This feature may be useful when completing a form for someone else or when needing to complete a form quickly.
- **6.1.3.4 Population That Will Not Utilize Digital Systems:** Some stakeholders felt that there is a segment of the population that would not use the digital system due to a variety of reasons such as lack of awareness, inconvenience, lack of access, disabilities, discomfort with technology, and distrust in security and privacy. This is supported by the In-flight Form Digitization Survey results showing 19% preferring the paper form, particularly among the 65 and over age group with one in four preferring the paper form. This reduces the operational feasibility so alternative options should be considered for this segment of the traveling population.

6.1.4: Traveler Completes Agricultural Declaration Form



Completing the agricultural declaration form is straightforward and already familiar to anyone who has traveled to Hawai'i. The following considerations may affect operational feasibility:

- **6.1.4.1 Complete 24 Hours Prior to Departure:** Most stakeholders felt the traveler should be allowed to fill out the form at least 24 hours in advance to make it more operationally feasible. Restricting forms to be filled out during check-in, at departure gates, and in-flight will cause congestion, confusion, and disruption to people traffic flows at the airport and on aircraft, reducing operational feasibility. The In-flight Form Digitization Survey shows that 53% prefer to complete the online form prior to the flight and 32% would rather complete the form during the flight. The current law is written specifically for the paper form process which implies that the form is completed in-flight. Changes to the statutes would be needed to address digitization of the form.

6.1.5: Traveler Completes Optional Tourism Survey



Operational feasibility concerns were raised about achieving a sample size equivalent to the current paper process with a digitized system. According to the HTA 2018 Annual Visitor Research Report, there were approximately 6.3 million domestic arrivals. The 2019 HDOA report to the legislature stated that 3.7 million agricultural declaration and tourism survey forms were processed, which is a highly significant proportion considering only one form is completed per travel party. This is consistent with the In-flight Form Digitization Survey showing that 92% complete the declaration portion and 79% of travelers complete the tourism survey portion. This can be attributed to issuing the paper form to all head of household travelers onboard and the free time available to complete the tourism survey during the flight.

According to the In-flight Form Digitization Survey, 43% indicated that they are somewhat or more likely to complete both the online agricultural declaration form and tourism survey, 12% are somewhat or much less likely and 44% are indifferent to online vs. paper forms. The average score of filling out a form online is 3.55 out of a possible 5. The midpoint of the scale is 3.0 which indicates a net greater likelihood of filling out an online form. A single page online form that contains both the agricultural declaration form and tourism survey portions could be designed to encourage survey participation. These findings suggest that maintaining a significant sample size with the digitized system will be operationally feasible. However, 19% preferred the current paper form, particularly among the age group 65 and older. The State should assess the impact and consider alternative channels such as intercept surveys and other methods if needed.

6.1.6: Assist Traveler



The digitized system will require help desk support for travelers requiring assistance either online, by phone, or in person at the airport. These support services may be performed in-house or contracted to support vendors. The support staff will require special access to the digitized system to see all traveler data. A similar customer care support system was implemented for Safe Travels so the State has experience providing these services. Airlines did not want a repeat of Safe Travels where they assisted travelers with completing the forms at departure gates prior to boarding.

6.1.7: Declare During Airline Check-in



The option to include the agricultural declaration form in the airline check-in system has low operational feasibility based on feedback from airline stakeholders. All airlines felt this would not be feasible because it would require modifications to their core system which is cost prohibitive and has the potential to impact

the check-in process. Each airline has its own check-in system or uses a shared service. In either case, modifications to these systems are difficult, costly, and require a lengthy approval process. Airlines understand the benefits of this option and some were open to discussing less invasive ways to improve the experience for their customers.

6.1.8: Airport Announcements to Complete Agricultural Declaration Form and Tourism Survey



Airport gate announcements to remind travelers to complete the agricultural declaration form and tourism survey would have to be coordinated with the airlines. Some airlines indicated that gate announcements are operationally feasible. However, user and technical support would not be available to assist travelers at the gate.

Regarding access to the digitized system at the airport gate, Google searches indicated that the following airports with direct flights to Hawai'i provide free Wi-Fi services:

- Atlanta (ATL)
- Austin (AUS)
- Boston (BOS)
- Charlotte (CLT)
- Chicago (ORD)
- Dallas (DFW)
- Denver (DEN)
- Houston (IAH)
- Las Vegas (LAS)
- Long Beach (LGB)
- Los Angeles (LAX)
- Minneapolis (MSP)
- Newark (EWR)
- New York (JFK)
- Oakland (OAK)
- Ontario (ONT)
- Orlando (MCO)
- Phoenix (PHX)
- Portland (PDX)
- Sacramento (SMF)
- Salt Lake City (SLC)
- San Diego (SAN)
- San Jose (SJC)
- San Francisco (SFO)
- Santa Ana (SNA)
- Seattle (SEA)
- Washington (IAD)

In addition, 92% of travelers had at least one person with a smartphone with Internet access according to the In-flight Form Digitization Survey

6.1.9: In-flight Announcements to Complete Agricultural Declaration Form and Tourism Survey



Airlines indicated that access to the digitized system can be made available while in-flight by whitelisting the Internet address of the website on its in-plane Wi-Fi entertainment network. Some airlines also offer free or paid Wi-Fi services during the flight. Availability of Wi-Fi and sufficient bandwidth to complete the digitized form in-flight may vary by airlines and flights. However, many airlines said that there is a trend towards higher bandwidths and greater availability of in-flight Wi-Fi which suggested that Wi-Fi access will become more prevalent in the future.

In-flight announcements to inform travelers about completing the In-flight Form would need to be coordinated with the airlines. Some airlines indicate that this is operationally feasible with proper training of their in-flight crew. Completing the digitized forms while in-flight may be advantageous, particularly for the tourism survey since travelers have ample time over the long flight. The State should consider creative ways to encourage travelers to complete the forms such as providing information about Hawai'i and other topics of interest.

6.1.10: Process Agricultural Declaration Data



Data from completed digitized forms will be processed in real time to provide HDOA Plant and Animal Industry staff advanced declaration information for each flight. Rules can be configured to flag passengers to intercept upon arrivals.

6.1.11: Conduct Inspections



The digitized system would provide HDOA inspectors with advanced notice of traveler declarations and what products or pets are onboard the aircraft. The digitized system can deliver this information directly to inspectors while at the arrival gate. Inspectors would have been equipped with mobile devices in order to receive the information in real time.

If the paper form remains an option, there will be operational steps to review the paper forms in addition to the digitized system reports. Operational impacts should be discussed further with HDOA.

6.1.12: Transfer Airline Data



Airline data such as daily passenger counts and reconciliation data for each flight would be transferred to the digitized system through established interfaces. Some airlines said this may be operationally feasible, however, further discussions are required to discuss data privacy and determine what information can be shared with the State.

6.1.13: Transfer Tourism Survey and Agricultural Declaration Data

Feasibility Score



Administration of tourism survey data captured in the digitized system would be needed to merge the data with the DBEDT SPSS data system. Similar operational processes currently exist with the tourism survey data scanned by SMS Research. This could be done through similar batch system interfaces. Operational procedures would need to be in place to ensure all data is transferred accurately and on a timely basis.

In addition to tourism survey data, agricultural declaration data could be transferred to the HDOA system such as the AIS system through standard batch interfaces.

6.2: OPERATIONS MODEL – COMPLIANCE & ENFORCEMENT OPTIONS

Stakeholders express general concerns and questions about how the digitized form will be enforced. Airlines are not able to enforce compliance and restrict passengers from boarding or disembarking. An acceptable level of compliance could not be determined during the interviews. Additional discussions with stakeholders will be required to develop an operationally feasible process.

6.2.1: Checkpoint Stations Not Considered Feasible:

Feasibility Score



The use of scanners and manned checkpoint stations at departure and arrival gates to ensure compliance was not considered operationally and financially feasible by most stakeholders. During Covid, Safe Travels incorporated scanners and checkpoints to ensure all travelers complied with Covid restrictions to keep Hawai'i safe. Airlines assisted travelers with completing the forms at departure gates prior to boarding. Significant State and Federal funding were required to operate the Safe Travels program. Many stakeholders felt that a level of compliance is not needed for the In-flight Form and the same level of funding will not be available. Airlines did not want a repeat of Safe Travels where they assisted travelers with completing the forms at departure gates prior to boarding.

6.2.2: Reconciling Airline Data May Be an Option:

Feasibility Score



An alternative method of compliance and enforcement was discussed with stakeholders. This method relies on the State receiving passenger data for each flight from the airlines to be able to reconcile with the completed In-flight Form data. All airlines expressed concerns about this method of data due to data privacy, security, and technical concerns.

6.2.3: Honor-Based System:

Feasibility Score



Some stakeholders proposed an honor-based system with random audits. This would rely on a public awareness campaign and on-premises notices, electronic notifications, and announcements prior to check-in, during check-in, at departure gates, during the flights, and at arrival gates. This method is operationally feasible from a digitized system perspective but would not ensure compliance so the State should consider appropriate impact and mitigation measures.

6.3: OPERATIONS MODEL – PAPER FORM OPTION

A hybrid system that allows for travelers to continue using a paper form in-flight would create operational challenges for airlines. A hybrid system would create an additional burden on airline staff to handle both digital and paper processes. A suggestion was made for the paper forms to be available either at the departure or arrival gates for travelers to pick up and submit upon arrival at a designated location. The operational impact of this option should be discussed further with the State.

6.3.1: Paper Forms on Aircraft

Feasibility Score



Airlines felt maintaining the current paper process in addition to a digitized system would not be operationally feasible. They cite operational issues such as not knowing who did not complete the form online and who should receive the paper forms and the added burden of handling both paper and digital systems. This may also cause operational issues with inspectors that have to handle both paper and digital forms during inspections.

6.3.2: Paper Forms at Departure and Arrival Gates

Feasibility Score



Providing paper forms at arrival and departure gates was suggested by some airlines. Passengers would have to drop off the form upon arrival which would require drop-off locations at gates. This may also cause operational issues with inspectors that have to handle both paper and digital forms during inspections.

6.3.3: No-Paper Option

Feasibility Score



For a no-paper option to be operationally feasible, agreement among stakeholders must be obtained. Some stakeholders felt strongly that no paper should be provided, and others felt otherwise. In addition, operational accommodation would need to be made for travelers who are unable or unwilling to use the digitized system. According to the In-flight Form Digitization Survey, 19% preferred the paper process, 8% lacked a party member with a mobile device that had Internet access, and 9% were unwilling to use airport Wi-Fi systems.

This may involve operational resources located at all domestic arrival gates that can complete the form for the traveler or provide devices and assistance. Providing these resources at departure gates would require cooperation from the airlines. Airlines did not want a repeat of Safe Travels where they assisted travelers with completing the forms at departure gates prior to boarding.

6.3.4: Hybrid Processing

Feasibility Score



The operational feasibility of processing the paper form is high considering resources and processes are currently in place. Contract terms and processes would need to be modified to account for a reduction in volume. The paper forms would be scanned and processed following the current process, and the data would need to be merged into DBEDT SPSS data warehouse along with the digital form data.

6.4: OPERATIONS MODEL – TOURISM SURVEY OPTIONS

6.4.1: Integrated with Agricultural Declaration Form

Feasibility Score



Integrating the tourism survey with the agricultural declaration form would be operationally feasible with proper design. The agricultural declaration form and tourism survey could be designed as a single scrollable page rather than requiring additional clicks to access the tourism survey.

6.4.2: Promotion and Special Offers

Feasibility Score



Incorporating promotional campaigns and special offers as incentives to complete the tourism survey is operationally feasible considering the State's resources and experience in marketing to visitors. With whitelisting the digitized system and the trend towards greater Wi-Fi availability and higher Internet bandwidth on flights, creative approaches could be developed to occupy the free time travelers have enroute to Hawai'i.

6.4.3: Intercept Surveys

Feasibility Score



Some stakeholders felt that separating the agricultural declaration form and conducting the tourism survey using an intercept methodology could be a somewhat feasible alternative to collecting visitor profile data through the In-flight Form. However, coming anywhere close to the current sample size and reach of the In-flight Form would require significant resources well beyond the current capacity of the State; a third-party research vendor would be required to collect the data at airports across the State during various days of the week and dayparts (to minimize sampling bias). This data collection methodology would be significantly more expensive than the current approach. Moreover, stakeholders expressed concerns about the comparability of data collected using an alternative sampling approach with longitudinal data collected over prior decades.

6.5: IMPLEMENTATION MODEL - PILOT PROGRAM

6.5.1: Pilot Program

Feasibility Score



Pilot programs to test the system with selected airlines/flight prior to full-scale roll out was highly recommended by most stakeholders. Some airlines were open to participating in pilot programs as they have done under Safe Travels.

Some stakeholders expressed concerns about a pilot approach if it required having to handle both paper and digital methods for an extended period of time. To mitigate these concerns, a clear plan with timelines should be developed for the pilot program with input from all stakeholders. Given these conditions, a pilot approach would be operationally feasible.

6.6: IMPLEMENTATION MODEL - POLICIES & PROCEDURES

6.6.1: Law Changes



Changes to the law will be required if a digital system is implemented since the statute refers to the paper form process. These changes should address the use of digital technologies, time windows for declarations, and levels and methods of compliance and enforcement. This will require further research and lead time to go through the legislative process.

These changes seem operationally feasible based on the level of stakeholder support for a digitized system and 81% of the public preferring a digitized In-flight Form according to the In-flight Form Digitization Survey.

7: USER ACCEPTANCE FEASIBILITY

To analyze the acceptance of users if digitizing the In-flight Form, the results of the quantitative survey conducted for this study were analyzed to determine whether a reasonable proportion of passengers would be willing to adopt this new form format.

Overall, it was seen that a strong proportion of survey respondents would prefer to see the form in a digital format and only a small percentage of passengers would be less likely to complete the form if it is digitized. However, it was seen that not every party flying to Hawai'i has access to a smartphone which may indicate the need for implementing a hybrid format if 100% compliance is to be enforced.

7.1: WILLINGNESS TO ADOPT

In the quantitative survey, participants were asked to give a rating from 1 to 5 to describe whether the implementation of a digitized form would make them more or less likely to complete both the agricultural declaration form and tourism survey.

| Rating | Percentage |
|---------------------------------------|-------------|
| (5) Much more likely to complete both | 31% |
| (4) Somewhat more | 12% |
| (3) No difference | 44% |
| (2) Somewhat less | 7% |
| (1) Much less likely | 6% |
| MEAN | 3.55 |

Base: n=1,097

Overall, over two in five (43%) would be either somewhat or much more willing to complete both forms if they were digitized. With a mean score of 3.55 (where a higher mean score indicates a greater likelihood of completing both surveys), it is seen that digitizing the forms would lead to an overall increase in proportion of Hawai'i-bound passengers that would be willing to complete the forms.

7.2: FORM FORMAT PREFERENCE

In this portion of the quantitative study, respondents were asked to choose their preferred method of filling out both the agricultural declaration form and tourism survey. The table below shows the breakdowns for each options with "online" being the total percentage of those who chose digital options (not paper).

| Format | Percentage |
|---|------------|
| Online (NET – Mobile device, computer/laptop) | 81% |
| Paper | 19% |

Base: n=1,097

Of those surveyed, over four-in-five (81%) would prefer to complete the agricultural declaration form and tourism survey in an online format, while about one in five (19%) prefer paper.

| Format | Percentage |
|----------------------------------|------------|
| Mobile device (NET) | 76% |
| • Mobile device – website | 57% |
| • Mobile device – downloaded app | 19% |
| Computer/laptop – website | 5% |

Base: n=1,097

More specifically, more than three in four respondents (76%) indicated that they would prefer to complete the two forms on a mobile device with more of this group interested in using a website (57%) over a downloaded mobile application (19%). This indicates that a shift to a digital format would be more appealing to a majority of airline passengers.

While some of the respondents who would prefer a paper form may be accepting of a digital format, this group contains a higher proportion of older respondents (65+ years) who may not be able to access an online form; this indicates that a hybrid format would be needed to increase compliance.

7.3: TECHNOLOGICAL REQUIREMENTS

| Have A Smartphone? | Percentage |
|--------------------|------------|
| Yes | 92% |
| No | 8% |

Base: n=1,097

A strong majority of passengers (92%) had at least one party member with a smartphone during their last trip to Hawai'i. In terms of user acceptance, this indicates that a majority of passengers have access to a device that can be used to complete the forms. However, 8% traveled without a smartphone and would need another way to complete the forms.

| Use Cellular Data/Free Wi-Fi? | Percentage |
|-------------------------------|------------|
| Cellular Data | 77% |
| Free In-Flight/Airport Wi-Fi | 91% |

Base: n=1,097

To complete the forms digitally, a similar proportion of respondents (91%) would be willing to utilize free in-flight or airport Wi-Fi to complete the two forms. A smaller proportion of three in four (77%) respondents would be willing to complete the forms using their personal cellular data, implying that user acceptance will be higher if it can be completed in an area where passengers have access to free Wi-Fi.

7.4: INFORMATION SOURCES

| Information Sources | Percentage |
|---|------------|
| Email communication from airline or travel agency | 56% |
| State of Hawai'i website | 47% |
| Airline/travel agency website | 41% |
| Gate/in-flight announcements | 40% |
| Hawai'i Tourism Authority website | 24% |
| State of Hawai'i Department of Transportation website | 19% |
| Gohawaii.com | 12% |
| Social media | 9% |
| In-flight magazine | 8% |
| Other | 2% |

Base: n=1,097

When asking survey respondents to share which information sources they would utilize to learn more about changes to the In-flight Form, it is clear that information and messaging will need to be present on a wide range of State and airline websites. On top of this, many passengers will expect to receive communications from their carrier or travel agency.

APPENDIX A: STAKEHOLDER INTERVIEW FINDINGS

1: GENERAL CONSIDERATIONS

When considering the in-flight agricultural declaration form, most stakeholders agreed that the current process is cumbersome, costly, and not an optimal means of gathering information. In particular, many stressed the importance of compliance and how they believe form completion is not enforced in the current format. Looking at the possibility of offering the In-flight Form in a digital format, stakeholders discussed the following potential benefits and concerns with the proposed change.

1.1: BENEFITS OF DIGITIZING THE IN-FLIGHT FORM

- **1.1.1: A More Modernized Approach to the Current Process:** Compared to the current process, many stakeholders shared that moving the form to a digital format is a more modernized approach and embraces the technological capabilities of this era.

"The department heads in our airport operations team saw it as a huge plus for this to go digital, or to you know, eliminate that experience onboard. So, I think this is great. Just a matter of how and when. The devil is always in the details, right? But I'd say you have support from the operations to pivot from the traditional to a more modernized approach." (Domestic Airline)

"Conceptually, the idea seems to make a lot of sense to me in that, look, everybody, why would you hold on to paper in 2023?" (Domestic Airline)

"I don't know exactly how to word this or like quantify it, but just embracing technology, moving into the 21st century. Bringing us out of the dark ages kind of thing." (State Representative)

- **1.1.2: No Longer Have to Deal with Illegible Data:** Some stakeholders felt that moving to a digital format would help circumvent human error and in turn produce more accurate and legible data.

"With hard copies, I mean, I filled out some of my forms. I have a terrible handwriting. We miss a lot of the data. So, there's only benefit for us for these things." (Department of Agriculture)

- 1.1.2.1: Poor handwriting was mentioned as being time-consuming for airlines with passengers requesting redo forms due to poor penmanship.

"You also have to take extra [forms] with you because penmanship is not something that it used to be and customers do make mistakes, ask flight attendants for redos. It's an extra trip through the aisle for flight attendants. At least one extra trip." (Domestic Airline)

- 1.1.2.2: The third-party contractor tasked with scanning the paper forms and processing the data mentioned that the forms will occasionally arrive wet during bad weather, making some of the data illegible.

"Sometimes when the weather is bad, there's rain, the forms come to us like wet. So, we have to transcribe what, if it's readable, we have to transfer. If it's not readable well, we can't do anything about it." (State Research Vendor)

- **1.1.3: Do Not Need Pens to Complete:** A headache shared by most airlines and personally experienced by other stakeholders, needing a pen to complete the current form was commonly mentioned as a major flaw in distributing physical forms. By moving to a digital format, passengers would no longer have to borrow pens from flight attendants or other passengers.

"It makes it easier on our flight attendants. You don't have to make multiple trips down, pass everything out, try to find pens for everybody [INAUDIBLE] 'I don't have a pen, I don't have a pencil, I can't reach them in, some way of filling it out'. And then having to make another trip to collect it all make sure it gets to the gate agent." (Domestic Airline)

"I think there are probably some people who would view it [digitization] positively and that it's one less thing to do onboard the aircraft. And you don't have to deal with people not having pens and things like that." (Domestic Airline)

"The flight attendants never have enough pens. So, they will be very happy to not have to distribute these forms and find folks who have pens on board to share amongst themselves." (Domestic Airline)

- 1.1.3.1: With many passengers not traveling with a pen on-hand, some stakeholders mentioned that digitizing the In-flight Form may increase participation.

"But if the response rate is going to go up through moving from paper and pencil move. Many people don't have pencils or pens in the flight. So that's another reason why they are struggling to do this. [...] So, if the new approach improves participation in the survey, that's a great, welcome step, right?" (Economist)

"I don't see any downsides unless we think that people are less likely to fill it out if it's on their phone, rather than if it's a little piece of paper. [...] I don't know anybody that carries a pen on them these days. People just don't carry pens." (State Representative)

- **1.1.4: Added Benefit of Accessibility:** With some passengers having vision impairments, it was mentioned that accessibility options such as text-to-speech would be a welcomed change.

"And it also aids in accessibility for folks that maybe have a text to speech, or stuff like if they have a visual impairment or hearing impairment, whatever that may be. If there was those accessibility options for them, I think that'd be a welcome change for that community as well." (Domestic Airline)

- **1.1.5: One Less Distraction for Airline Staff:** Being an extra process for flight attendants and ground crew employees, most carriers mentioned that their staff would welcome a transition to a digital form.

"[MODERATOR: How do you think frontline staff will react to the idea of digitization if we look at user acceptance?] Well I think they're going to love to not have to do it. [MODERATOR: Why is that?] One less thing for them to have to do." (Domestic Airline)

"Success would be an easier experience for our flight attendants and our ground crew who are navigating the paper forms today." (Domestic Airline)

"It's just that both departure and arrival, flight attendants are busy. Like super busy. I'd rather them paying attention to securing the cabin, facilitating safety planning, and not necessarily doing additional paperwork." (Domestic Airline)

- **1.1.6: Improves the Guest Experience:** Keeping their focus on providing high-quality guest experiences, some airlines stakeholders shared how digitizing the form would allow flight attendants to spend more time providing high-quality hospitality experiences.

"But overall, I think it's a great enhancement and will help relieve a duty of our flight crew, to free them up to take care of customers and provide a greater level of hospitality towards the end of the flight when we would normally do the form." (Domestic Airline)

- 1.1.6.1: Should passengers be able to complete the form prior to their flight, it was mentioned that digitizing would allow them to have a more relaxed flight and not have to worry about filling out paperwork before landing and enjoying their Hawai'i vacation.

"At the end of the day no one wants to wait in line. If you can fill this out faster or fill this out beforehand, and you want to do it, hey, you're gonna have smooth sailing once you land and you can get to the beach faster, right?" (Domestic Airline)

- 1.1.6.2: For those passengers who may be unsure how to answer questions on the form or survey, it was shared that a digital format may be able to guide passengers through the questions and provide additional information should they need it.

"I think that when you're filling out a form, you can kind of guide the person that's doing the form. And I think you can help lead them along the way to provide the accurate information rather than just taking a guess." (Department of Agriculture)

- **1.1.7: Increases Safety on Flights:** With some waiting until the last minute to complete the form, an airline stakeholder mentioned that some passengers will have their tray tables down during landing which poses a potential safety risk.

"Oftentimes customers procrastinate, and then they're attempting to fill [the form] out on tray tables when we're in our approach procedure or they flip out a tray table when we're trying to deplane. All these things are safety risks. And therefore, paper forms are, from our In-flight Services Group, something that we're always looking for opportunities to get out of our processes." (Domestic Airline)

- **1.1.8: A More Sustainable Option for Airlines:** Airline stakeholders shared how shifting to a digital form would immediately reduce the amount of paper carried on each flight which would generate less paper waste and lead to incremental lower fuel consumption. Not only does this lessen fuel costs for airlines, but it also lessens the environmental impact of each flight.

"The other thing that we look at the benefit is the amount of weight that adding paper to the aircraft from a sustainability and conservation standpoint. It is significant. So, anything that we can do to literally lighten the load will have an environmental benefit." (Domestic Airline)

"We wouldn't be carrying around a bunch of paper back and forth. So, while in the individual flight this handful of paper doesn't amount to much, considering the amount of paper that adds up over years, days, years, weeks, months, years. I see that as a good thing. One, in the sense that we're not wasting paper. Two is that while the weight is extremely small, every ounce, every pound does add to the fuel burn of an aircraft." (Domestic Airline)

- **1.1.9: Allows for More Proactive Enforcement:** Whether it is from additional steps afforded by digitization to ensure compliance or increased data quality allowing for more accurate information, many stakeholders shared how a digital form would positively affect enforcement and in turn help protect Hawai'i's natural resources.

"This is where the Ag form digitization works depending on how it's set up. So, if it's tied to the individuals through the booking, right? Their name and their info, or the required information, maybe not their address, but their name as listed on their boarding pass is generated from the airline. Obviously, they can't fake it. So, if they do declare something, you will know who that person is before they get here. And you can just go to the airline, hey, you know, we have you, obviously, this is we'll have to establish contact, but hey [DOMESTIC AIRLINE] on [DOMESTIC AIRLINE FLIGHT NUMBER], passenger so and so has declared a snake. What seat are they on? Boom, boom, boom. You'll be waiting for them at the gate and the flight attendant won't let them off." (Department of Agriculture)

"And then on the opposite end, wherever the server is, is able to say, 'Here's a red flag.' Whether or not that digitized or electronic system that you have, literally red flags me right off the bat saying that I'm declaring I have a snake or I have fruits and vegetables. [...] By the time I land in Hawai'i I should be met with the Department of Agriculture quarantine guys to say, 'Hey, pull her. We want her bags. We want her want her stuff' or something like that." (State Senator)

- 1.1.9.1: Some shared how digitizing the form could allow for more educational opportunities for passengers. In particular, it was mentioned that the form could be tied to HTA's Mālama Hawai'i messaging.

"And then, maybe after they fill it out they can see a video about how to Mālama Hawai'i, that there's other ways to carry forward our messaging." (Hawai'i Tourism Authority)

"So, I think in terms of this particular issue, we're looking at it as: One, it is state law to do it, right? Two, let's make it easy for them to do it. And then three, let's just use it as an educational moment for us to be able to say hey, these are the things that you're not allowed to bring in please help us protect this place." (Domestic Airline)

- 1.1.9.2: Should the digitized process require 100% compliance and be completed prior to boarding, it was mentioned that a digital form could provide follow-up information including documentation for those declaring an item or pet.

"Every now and then somebody comes in, they said, 'I never knew anything about Hawai'i's requirements. I didn't know. Airline never told me.' Well, if you're doing the Ag deck, and you say, 'Hey, I'm bringing a dog.' Bang, and it tells you, 'Go to this link or it needs to meet our needs, et cetera.' And that way that person is advised and potentially it could avert coming into the state not having anything done." (Department of Agriculture)

- **1.1.10: More Streamlined Logistics for Stakeholders:** From having the form readily available on every in-bound flight to being prepared to address any agricultural/animal concerns upon landing, several stakeholders shared how a digital form could improve overall logistics.

- 1.1.10.1: Airline stakeholders expressed how the current process is cumbersome, forcing them to ensure the form is available on all Hawai'i-bound flights and that the staff onboard have been properly trained for this niche scenario.

"There's a significant amount of work that already exists for airlines in distributing and managing the process of paper forms. It's cumbersome." (Domestic Airline)

"We have flight attendants who are in the middle of doing other duties. It's not a normal flow as part of their regular duties, right? So on a flight between Dallas and Albuquerque, there is a flow, and that's it's the same flow as on a fly between Dallas and Springfield, and Dallas and Missoula [...] You've got yet another process that they need to be aware of and make sure they keep track of. So, that becomes a training thing. It's got to be documented in their manuals, all of those sorts of things. So, taking it out of the aircraft eases the workload and training." (Domestic Airline)

- 1.1.10.2: For HDOA, it was shared that digitizing the form would allow the department to have more timely access to agricultural form data, making it easier to manage staff and know which flights will need to have an agent present.

"I said a digital form can help us to limit the resources we have. We may not have to send an inspector to receive that flight, because we know before the flight leaves there's nobody on there that has anything to declare because they all went through. So, we don't even have to dispatch anybody there." (Department of Agriculture)

"Just because they declared doesn't necessarily mean that we need to check this plane. And I do agree that for example, you have one person who declares an apple, you only have two people. But there's another flight where somebody declared, you know, orchid plant. Obviously, you're gonna go to the orchid plant, then an apple, right? So, it gives you the ability clearly to utilize your limited resource and target specific things." (Department of Agriculture)

- 1.1.10.3: The Animal Industry Division within the Department of Agriculture mentioned that a digital form would allow them to have a more accurate understanding of how many animals will be arriving on each flight.

"It would be great if we could receive the data and be able to import it into our system, or at least parts of it, or something. So that, you know we're discussing we'd be able to compare it against what files or animals we have in this system. See if that animal that's coming in is qualified. And not only that, but if we have that information, it's again, another way of telling whether or not the animal actually is coming. Because we have a lot of animals that, they cancel last minute or if there's changes in flights and all these kinds of things. So, that'd be another way for us to be able to know." (Department of Agriculture)

- **1.1.11: Cost Savings Across the Board:** Whether big or small, most stakeholders involved shared that they would likely observe some level of cost saving by digitizing the In-flight Form.

- 1.1.11.1: With DBEDT being budgeted almost \$300,000 annually to print and process In-flight Forms, along with some airlines having to pay for printing and storage, cost savings could be realized by multiple stakeholders by not having to provide a physical form.

"In terms of the printing, I think I looked at the budget, we have \$870,000 for three years for the printing. So, you actually divide by three to calculate each year." (DBEDT Research Division)

"I think it will impact our budget because the activities and those scope of services will be a little different. Although we have the data, now currently scanning everything is... Every form is scanned, but if the, they have a partial of the data is from digital forms, my imagination is there will be cost saving. So, the budget will be smaller." (DBEDT Research Division)

"We currently pay for all of our forms to be printed. So that's on all the airlines. Those aren't provided. We also store them, so that storage is also on us. So currently, there are costs for paper that, to [NAME]'s point, yeah. Though, as we switch, we'd have that cost shift to that side of the house." (Domestic Airline)

"But, just the physical transportation of those forms is either a State of Hawai'i or [DOMESTIC AIRLINE]'s costs that could be saved. You know we, keeping on hand inventory levels, that is a management function that would go away. I don't think that it's anyone's entire job, but chipping away at these things is moving in the right direction." (Domestic Airline)

- 1.1.11.2: It was mentioned that not having to load forms on each Hawai'i-bound flight would likely produce some incremental savings in terms of fuel, but it may not offset the cost to airlines of implementing a new digital system.

"The only savings I can see associated with doing away with paper would be the fuel burn associated with carrying that paper on the aircraft, which again, I think is a pretty nominal sum. Because there's lots of ways in which this could increase cost for us, but not a whole lot of ways in which you would necessarily decrease it." (Domestic Airline)

- 1.1.11.3: Needing to digitize physical forms in the current process, some believed that some savings would be realized in terms of data entry and process efficiency.

"Saving money. Moving into the 21st century. It's kind of been a long time coming. And like reducing the amount of data entry needed. I don't know how many people we must hire to, or I guess it's a Scantron. But yeah, it doesn't, it seems like there's way more efficient ways. So, efficiencies saving money. It's probably all I can think of for now." (State Representative)

- **1.1.12: More Timely Access to In-Flight Data:** For the stakeholders relying on the In-flight Form data for data analysis and decision-making, it was shared that collecting the declaration form and tourism survey information digitally could allow it to be accessible more quickly versus having to wait for the information to be digitized.

"I think that data will be collected in a much more timely fashion and distributed in a much more timely fashion which is the most important reason for doing it, is to get timely data." (State Research Vendor)

"There are critical deadlines for reporting on a monthly basis. I do see that if it could be I mean, if the methodology was sound, and accepted and implemented, and it was accepted in the whole bid, I mean, it could probably improve turnaround." (State Research Vendor)

- 1.1.12.1: In particular, HTA shared that real-time data could allow reporting visitor characteristics on a more frequent basis and identify destination management trends more quickly.

"If we could report (visitor) characteristics on a daily basis, the industry could prepare for any problems that we may have, and we will see the surges going in and out, or they can trend and see that, okay, the rest of the week is going to be bad or something, they can adjust for that." (Hawai'i Tourism Authority)

- **1.1.13: High-Quality/Accurate Data:** By implementing digital survey options such as drop-down menus, respondent mistakes will be greatly reduced through form digitization producing more accurate data for analysis and data-driven decision-making.

"Making mistakes, making errors, that depends somewhat on the user interface, right? So, if they can choose results based on a drop-down menu, if they need to type in numbers or typing letters, that's going to be obviously leading to non-standard responses, right? So, the user interface is going to be very, very important. Not just for whether the users are willing to do it and upset and stop halfway through, but also the quality of the data that's being collected." (Economist)

- 1.1.13.1: On top of gathering more accurate data, it was shared that data management would be much easier with all information being directly sent to a database which is easily searchable compared to shuffling through paper files.

"I think we'd have a better handle on managing the data too. Because right now with paper, paper takes up space. It's not easily searchable. Or, history type of standpoint, you're going back into paper files and just trying to retrieve past information, past data, it's not realistic." (Department of Agriculture)

- 1.1.13.2: With passengers being more relaxed and possibly drowsy during the flight, it was mentioned that digitization may provide the opportunity to fill out the form prior to boarding when passengers are more attentive, leading to more accurate data.

"I think we get better and better data when people are filling it out in timeframes that they have time. If it's at the gate, waiting for the plane, there's downtime that you can utilize to make sure you fulfill good data. On the plane, when people are waking up out of drowsiness and everything or watching their movie, the last thing they want to do is fill something like that out." (Department of Transportation)

- 1.1.13.3: Should the form be tied to customer's flight reservation, it was mentioned that a digital form could prevent passengers from providing intentionally false information.

"Secondly, when I actually pulled some of the information when we're taking a look at doing it as part of Safe Travels, some of the.. Some of the one's I pulled, Mickey Mouse. There was one that said Bill Clinton. I mean, people were just putting false links is what it came down to. And as the flight attendants come pick it up, they weren't looking at it. They were just picking it up and then shoving it in the envelope and giving it to the Ag guy when he came by the loading bridge. So again, hopefully by them doing it digitally, we'll have more accurate information." (Department of Transportation)

- **1.1.14: Ease of Implementing Changes to the Form and Survey:** Not being bound by printing contracts, some stakeholders mentioned that shifting to a digital form could allow HDOA and DBEDT to quickly and easily make changes to their associated forms should updates be needed.

"But the printing contract is huge. And when you have a printing contract like that, to your point, [NAME], there's no opportunity to revise the form. If you really wanted to revise the form where, if you wanted to do something on the digital form, it can be done almost immediately. You wanted to make

a change to a question or add a word or whatever you want to do? It can be done immediately. Or again, when you're dealing with print, it's not so easy." (State Research Vendor)

"I'm assuming the same questions, just to maintain consistency with history, same questions would be asked. But then, since there's a change, there might be a couple maybe questions that we could add to the survey that would be very informative." (Economist)

- 1.1.14.1: Being easily modifiable, organizations such as HTA and DOT mentioned that this would provide opportunities in the future to add additional questions to the form.

"If there were questions, you know, 'What was your customer experience like when you landed?' and all that kind of stuff, that would be great. But it doesn't. It talks about, what hotel you're staying? How long are you staying? Are you on vacation? Are you on business? It's more basically so that we can take a look at what the spending pattern of the individuals are that are coming in and so on, so forth." (Department of Transportation)

"I think flexibility too. Digital versions mean you can modify right away, make changes, add questions, take away questions" (Hawai'i Tourism Authority)

- 1.1.14.2: Some shared that the ability to modify the survey could open up avenues in the future to promote Hawai'i-based programs such as DBEDT's Made in Hawai'i portal.

"The only other thing that I pushed for the park reservation thing is if you also had a link that said we have a link that will take you into DBEDT's Made in Hawai'i program where, if you're interested in looking at what our products unique to Hawai'i and are made in Hawai'i by small businesses, then you would have a lot of small businesses here are talking up about how great the app is because it brings a link and I wound up selling X and then they wind up telling all their friends and family." (State Senator)

- 1.1.14.3: From a passenger perspective, a digital form would allow them to make changes upon submitting the form should they forget to declare something earlier on.

"It's something that if they could, if they do it on their phone, they could amend it or add something to it. If they're flying and they're going to be landing and then they figure out oh, hey, I forgot, XYZ. Add it to the list." (Department of Agriculture)

- **1.1.15: Increase Sense of Responsibility Among Visitors to Treat Hawai'i Differently:** It was mentioned that having passengers fill out a form instills the idea that Hawai'i is an exotic location, worthy of being treated more carefully and respectfully.

"One of the things some people, and it's a small group of people, but I just feel like it deserves a little bit of space here, is that some people say that having folks fill out the paper form does something to trick people's minds into thinking that they're traveling to something way more exotic than another

U.S. state. And I just have to voice that on behalf of some industry partners that I know that would say that, like it really adds to this like ambiance or this, like perception that I'm going to this like, really exotic, and I'm using my bunny ears for a bunch of different cultural reasons, exotic place." (Hawai'i Tourism Authority)

1.2: CONCERNS WITH DIGITIZING THE IN-FLIGHT FORM

- **1.2.1: Airlines Fear This Process Repeats Negative Aspects of Safe Travels:** Still fresh in their minds only a few years after the onset of the COVID-19 pandemic, most airlines expressed concerns of the digitization effort, connecting it with the struggles they had implementing the Safe Travels program for Hawai'i-bound passengers. In particular, airline stakeholders mentioned how a similar program could be expensive, require a higher volume of staffing, and ultimately be a burden for both airlines and passengers.

"I think our big concern is that we don't want this to be Safe Travels 2.0, right? Yes, please don't make it Safe Travels 2.0. There is just no... It was vastly expensive, of course, for the airlines to be able to put staffing in, to be able to check devices, and that just cannot happen again. Obviously, during a pandemic and getting out of it and all that kind of thing was, it was a necessity, right? But I think that is something that we are just all pretty solid on." (Domestic Airline)

"I think one of the things that colors the industry's view of this was the experience with Safe Travels where it was an extremely burdensome. It was, we digitized it, it was a digital process, but it was a digital process that was extremely cumbersome and relatively poorly designed. And that imposed a very large burden on the airline and the traveler. And we would like to see, not see that happen again with something like this." (Domestic Airline)

"The COVID piece, it was difficult to travel to Hawai'i. I, since I'm representing [Domestic Airline] on this call and it's being recorded, I won't give you my completely honest opinion on what I thought of the process to travel there. I will just say it was not particularly positive in terms of the complexity in the way people were treated and the level of inconvenience they were subjected to. And I get the state has its reasons. So, I'm not trying to be critical. I'm just saying the process itself though, it was cumbersome. It was challenging." (Domestic Airline)

- 1.2.1.1: Having taken the appropriate steps to inform travelers of Hawai'i's Safe Travels program, some airlines found that passengers were still not prepared upon arriving at the airport, requiring airlines to dedicate extra resources to help their customers.

"Our experience with Safe Travels, in which we used all of those channels [email and gate signage] pretty exhaustively to communicate to people, still resulted in substantial numbers of people coming to the airport not having done it or having done it wrong. And so, the real-life test of this really was during the pandemic and we very much saw the challenges with trying to reach out and do something like that." (Domestic Airline)

- 1.2.1.2: It was mentioned that a contact-tracing platform for airlines was being developed prior to the COVID-19 pandemic and still took two years to fully implement, suggesting that a similar digitization effort for the In-flight Form would require a significant amount of resources.

"For those of us who have traveled internationally, you may have seen during the latter part of the pandemic, contact tracing pop up as part of your travel experience for international as required by the U.S. Federal Government. What people don't realize is that that process was actually in the works and being requested by the federal government prior even to COVID. So, tech teams were already in the process of trying to figure out how to make that work. And it still was a two-year process. [...] And so keeping in mind, maybe broader than the perspective, all of the international carriers that also service Hawai'i, it's just a much bigger tackling than people realize." (Domestic Airline)

- **1.2.2: Ensuring Data Privacy with Digital Collection:** Across the board, many stakeholders expressed concerns regarding data privacy and emphasized the importance of anonymizing any data collected through the digital form to protect personal information.

"We've also got data privacy, and security issues, and the information that we have, perhaps our own employees collecting, that our employees shouldn't have access to, right? We don't want, I mean, look. We have great employees, right? But we're a very, very large organization. When you're talking 100's or 100,000's of people, someone in there is not going to be the best, right? They're not going to be, just the law of large numbers suggests that there's a risk." (Domestic Airline)

"They're gonna be privacy issues and whatnot I'm not going to get into. But, we should be very, I mean, we the destination should be ruthless in information security and privacy adherence to the strictest privacy protocols. All we need is anonymized data." (Economist)

- 1.2.2.1: While digital forms may be more convenient for passengers, some stakeholders mentioned that there may be added hesitation toward providing personal information in this format.

"There's certainly a convenience factor in that. But that will have to weigh against the privacy of one's that don't want the information being recorded in the first place." (Office of Enterprise Technology Services)

"I'm sure people be concerned with personal data like they were with Safe Travels." (Hawai'i Tourism Authority)

- 1.2.2.2: Additional concerns were presented regarding the potential of data breaches and who would be held liable if one were to occur.

"Cybersecurity and, like should a data breach occur, what the liability of the state is?" (Hawai'i Tourism Authority)

"Confidentiality, confidentiality, I mean, you don't want someone to hack their way into the database of where all these In-flight Forms are stored." (State Research Vendor)

"Depending on what data is harvested that could be vulnerable to hacking, especially if it's harvesting metadata of IP addresses and phone numbers or stuff." (State Representative)

- **1.2.3: Compliance Will Continue to Be an Issue:** Being mentioned by a wide range of stakeholders, ensuring compliance was a major concern in considering a digitized In-flight Form.

- 1.2.3.1: In the current format, some shared that there is a certain degree of obligation when being handed a paper form that will no longer exist should the form go digital. As a result, some stakeholders believe that shifting to a digital format will lead to a lower response rate.

"I feel guilted into filling it out as they come by and collect it. If I did it on my phone, I might not do it. But when the stewardess or flight attendants walking and collecting everybody's paper and everybody's staring at you as you're handing it to your neighbor, you feel guilty by peer pressure to fill it out. So, I think if it goes purely to a digital format, we might lose some people who would, or otherwise normally fill it out." (State Research Vendor)

"The other issue is really around compliance. And, if it is the intent of the State to have a high rate of participation with the form, I think there is a benefit in distributing and collecting the paper forms because it imposes a, to some degree, a sort of obligation by the guests to participate. We know that they get, we distribute the forms, they get them. I think the collection rate back is probably not 100%. But it's generally pretty good. And so, one of the questions I think we would need to think through is how you would get a similar level of participation, if that's in the State's interest, how you get a similar level of participation with a digital form? It's just much harder to manage compliance of that." (Domestic Airline)

"Enforcement might be a little bit tricky unless they're required to show that they completed the form [at] check-in. Otherwise, if it's the honor system, I can see participation going down." (State Research Vendor)

- 1.2.3.2: If a hybrid (digital and paper) format were to be implemented, some felt that compliance would be even more difficult and cause confusion around who will need a physical copy.

"You're adding a level of complexity. Now I've got to know, do they have an electronic one? Or, do I need to give out a paper one? So, you've got a decision to make. But is that overly difficult? I'm not the in-flight supervisor. I don't know. But I don't think that that's difficult. As long as

you know, I mean, we've got the paper today. Again, the big question is, how do I know who needs one?" (Domestic Airline)

- 1.2.3.3: Should compliance be enforced pre/post-departure, airlines mentioned that it would be taxing on their ground crew and that they would not be comfortable, nor allowed due to Federal Aviation Administration rules for domestic travel, to prevent passengers from flying due to not completing the form.

"It's going to increase the workload on our agents on the ground. That it will add complexity to the departure process. Having to verify things that the State might try to hold the airline liable for, missed papers, or a missed customer that doesn't fill it out. I very much do not want to see some sort of fines or liability because Bob didn't fill out his form properly. And we shouldn't be the police of that. This isn't international travel. This is interstate travel. And we shouldn't be the police for paperwork. That sounds very Soviet bloc, 'Show me your papers'." (Domestic Airline)

- **1.2.4: Negative Impact on the Guest Experience:** A few airlines expressed concerns of how digitizing the In-flight Form would negatively impact the guest experience as the current process is completed during the flight and does not interrupt their already busy experience at the airport.

"For us, de-planning and getting out of the airport is a point that our customers, they want to get out as quickly as possible. So, if there was some delay in boarding and getting off that aircraft in order to verify, like if someone was checking as they're getting off the plane or something, I think we would see a dissatisfaction from customers." (Domestic Airline)

"And so, I think that is something we really need to manage. It would not, I think, be good for travel here if people had to go by a checkpoint and demonstrate that they had filled out their In-flight Form. Again, one of the elegant things about the paper process is that you are able to do that without sort of interrupting the flow of passengers through airports or physical spaces." (Domestic Airline)

"There's a lot that we're putting on our customers these days in order, like the information that we're just spitting out at them. And to be honest with you, when they kind of walk through that airport check-in area, they're frazzled, and it's just, it's hard to communicate that." (Domestic Airline)

- **1.2.5: Will Need to Train Customers and Crew:** Having learned from experiences from Safe Travels, some shared that additional resources will be needed to retrain passengers who have become use to filling out the form physically along with training crew members to instruct passengers who may struggle using digital devices.

"If you've gone to Hawai'i already 30 times in your life, or you've been one trip before, you start to understand the process. And introducing something new to the way you have to check-in compared to what you normally do for a domestic flight, I think, would be a confusing and frustrating friction point for customers." (Domestic Airline)

- **1.2.6: Some Passengers Do Not Have Mobile Devices:** While airlines shared that digital adoption rates for the check-in process are relatively high among their customers, there is still a sizable portion of passengers that do not use mobile devices; this is particularly evident among older passengers. Not having a personal device to complete the form, some feel that the process will not be able to go fully digital.

"From Safe Travels, one of the things that kind of came up, and it wasn't often, but just understanding that, depending on how this form is done, [you] can't always assume that the passenger has a mobile device that would be able to maybe handle that type of form. So, believe it or not, there's still like a certain generation that prefers to use flip phones. So, technically what would happen is, for Safe Travels, they would have another family member do everything for them." (Office of Enterprise Technology Services)

"It's easier, I think, for people to do. Some people might not have phones or access to the web, you know, so they may not be able to complete the survey online." (State Research Vendor)

- 1.2.6.1: While having a mobile device, it was mentioned that some passengers may be hesitant filling out a form on their own device versus one provided by an airline or research interviewer.

"We also gave opportunities for link. So, we provided them with the link that they could go to using their own device as well. [MODERATOR: What was the adoption like for using that link? I mean, were passengers willing to do the survey using a link?] I think there was more hesitation, using their own personal device. But again, this was a while back, things have changed since then. But there was more hesitation for them using their own device rather than us giving them a physical iPad and using our device." (State Research Vendor)

- **1.2.7: Not All Flights Have Internet Connectivity:** Should the form still be completed in-flight, some stakeholders mentioned that not all flights have Internet connectivity and others only offer the service for a fee.

"So, my concern is that a lot of flights, they don't provide the what we call the onboard, or in-flight internet, or Wi-Fi. So, it is difficult for the passengers to complete the form online, the electronic form online." (DBEDT Research Division)

"So, if you digitize the form, how do you distribute it on the flights? If, for example, the flight doesn't have internet or provide free internet?" (Hawai'i Tourism Authority)

"And then the challenge is also, is that if it is digital, are you guys, or is it gonna be downloaded on the phone? The Wi-Fi is an issue. You will make the passengers wait longer. I mean, nobody wants to wait a second longer once they touchdown in Hawai'i. I just see a lot of challenges there." (State Senator)

- **1.2.8: Additional Costs Incurred by Airlines:** Some airline stakeholders shared concerns that digitization will lead to additional costs as they will need to update their systems, communicate the changes with their customers, and have a strong enough labor force to ensure compliance.

"Well, I think it very much depends on the process. I think it depends on what process is imposed. If we have to do some sort of checking of it, if we have to spend time communicating to consumers, if we have to update our system. And those are things that would certainly add cost." (Domestic Airline)

"The labor of the flight attendants in-flight to distribute the forms is not an incremental costs to the company. Safe Travels was an example of where we had to add significant amounts of labor to manage that process. And that cost us millions of dollars in incremental labor over that period of time. We ended up doing that because the process, the arrival process at the airport, was such a terrible experience for travelers, that we took on that burden ourselves." (Domestic Airline)

- **1.2.9: Not Enough Added Benefit to Justify Additional Costs:** Believing that the digitization process will bring on additional costs, some of those interviewed did not feel that enough added benefit would be gained from a digital form to justify the means needed to implement it. Others were unsure what the actual benefit from digitization would be.

"The reliability of the data, right? For what you pay, I mean, versus what you're doing now on paper, and the reliability factor that's built into that. It may come to the point, where just leave it paper, and you're not going to achieve a higher level of consistency and accuracy of information." (Hawai'i Tourism Authority)

"For the airport it's basically, what exactly are we going to do with the information? We know the agriculture information will go to the Department of Agriculture. Again, the information is used for such a limited amount of time. In other words, all they're trying to see is whether or not this person, obviously, if they have an animal or they have something that they're carrying that they're not supposed to. How is the Department of Agriculture going to be able to go ahead and confront that individual and say "Listen, and we need to extract that"? [...] And, again, the way the airport is set up right now, the Ag inspectors don't check people going out. In the old days, you guys are way too young to understand this, they used to actually stop us and kind of look through our bags and things like that. They don't do that anymore... So, what exactly will the Department of Agriculture do with this information? And, how beneficial will it be to them?" (Department of Transportation)

- **1.2.10: Negative Impacts from a Shift in Research Methodology:** Converting the In-flight Form to a digital format, many stakeholders that utilize the data shared that a shift in methodology can be problematic for some of the State's ongoing research projects.
 - 1.2.10.1: In terms of volume, some stakeholders felt that a shift to digital collection may reduce the number of responses received which would affect DBEDT's need for large sample sizes.

- "My understanding the impact would be the volume of forms collected and the quality of the data that's collected on those on those forms. And I know that historically DBEDT has been very interested in making sure... They're very interested in sample sizes. And so, my concern would be whether or not it can be collected efficiently in this manner because we tried. On our departure survey, we tried digitizing it on our end or whatever, and we could not meet the needs volume wise" (State Research Vendor)*
- 1.2.10.2: By changing how the survey data is collected, some shared that this may lead to sampling bias and self-reporting bias.

"And, if you can have a setup where you're sampling for every person that's on an inbound flight, you may have problems with the nature of the sample self-reporting bias. And, you'll understand some of these things, under representation by returning and a resident, intended residents, are there any intended residents anymore?" (Economist)

"It's biased if you can't survey everyone, every type of person. So, if they don't have a phone, or they don't have access, or something, you have to take into consideration those situations." (Hawai'i Tourism Authority)
 - 1.2.10.3: Being that several state research projects have been tracking data from the In-flight Form over time, it was shared that a shift in survey methodology could create a discontinuity, making it no longer possible to compare new data with historical data from the In-flight Form.

"One of the most important things to try to achieve here in this transition from one technology to another is the content of the survey itself. So, my starting point would be don't change a single thing in the survey. [MODERATOR: Tell me why.] Leave it exactly the same. Because otherwise, you'll have a discontinuity in the time series that makes it impossible to strictly compare the new data set with the old." (Economist)

"The In-flight Form is a critical component of the State's tourism research, period. I mean, without the In-flight Form survey, it would be extremely difficult to maintain continuity of the data sets that have been developed over decades and there would be an interruption to those datasets. And we just don't know what the effect would be on the reliability of the data if we were to see a massive shift in the methodology for these surveys that are so important for all of the economic analysis and other things that the State does." (State Research Vendor)
 - 1.2.10.4: An inadvertent effect of digitization may be unreliable weighting and in turn a greater margin of error on some State research projects.

"Then the weights are not correct. The data is, that we, the reports that we produce are going to be unreliable. There's going to be a greater margin of error than that we expect and people are going to be unhappy with inaccurate reports." (DBEDT Research Division)

- 1.2.10.5: As the current process has the forms being digitized in batches, some stakeholders shared that flight number and arrival data information may be negatively impacted. Instead of the In-flight Form processing contractor inputting this information manually from the batches received, passengers would need to input these fields on a digital form, potentially making it more prone to errors.

"So, when they scan the batch, they have the batch control. And they designate what the control numbers are for the batch. It has the airline, the flight and the date. Those are three things that they are controlling because they scan it in a batch. But if you look at the other column, what is self-reported by the passengers, even now they get it wrong. The only reason why it is correct is because they're in an envelope together, like physically in an envelope together." (DBEDT Research Division)

"The second thing, which they never were successful in doing, was getting the right flight number and the right dates on the Safe Travels records. It sounds like super simple, right? But no, they were never a success. We were never able to one-on-one match the total from a flight with, because a lot of times people have the wrong flight numbers. And, as long as it was a flight number that existed in the system, Safe Travels let them put it in. And then as far as dates, people are putting, filling in ahead of time. And if they put it in the wrong date there's nothing in the system to say, 'Hey, you didn't actually fly on that day'. So, it sounds super basic, but that's something that needs to be solved." (DBEDT Research Division)

- **1.2.11: Would Not Be Able to Report Daily Passenger (PAX) Counts:** PAX counts (passenger counts) refers to the number of passengers onboard an aircraft. While PAX data is transferred to the State on a monthly basis, some stakeholders shared that digitizing the In-flight Form would make it difficult to report daily PAX counts as they would no longer receive this information on the Important Envelope holding the In-flight Forms.

"It's only once a month. That is another concern. I think we will not have the daily PAX count if we digitize the form. We have to, currently I don't see the other ways to get a daily count because if we don't have the envelope, then the airlines will rely on the digital and they actually even don't know who completed the form electronically, because we wouldn't even know." (DBEDT Research Division)

- 1.2.11.1: Stakeholders from DBEDT shared that many businesses rely on daily PAX counts, meaning a change in this process would have a negative impact on how they plan staffing.

"I understand by talking to those people when they ask 'Where are the daily PAX data?' Because they, the businesses, especially the managers, they determine from the data, they determine the workload, if they want to call more people back and they want to have more people to be on leave. So, for their daily activities, the planning of their activities, I think we need the daily PAX count." (DBEDT Research Division)

- **1.2.12: Creates Unrealistic Expectations for Data Reporting:** While many saw digitization as beneficial in providing closer to real-time access to In-flight Form data, some were concerned that it may lead to unrealistic reporting expectation for those working with the data.

"One of the concerns that I have is that if people know that there are some digital database of responses, because people are filling out electronically, that they might expect that we would be able to produce daily visitor statistics. And that is not reasonable because there's a lot of cleaning and weighting and other things for the processing that goes on. You can't just give people raw data, but people in the general public don't understand the research methods. And so I think that there will be a call for daily visitor stats or, anyway, more frequent visitor stats and we would have to change a lot of SPSS syntax and all kinds of other things to even make that remotely achievable." (DBEDT Research Division)

2: USER EXPERIENCE

2.1: DIGITAL ADOPTION

- 2.1.1: Digital Adoption is Rising:** Allowing passengers to check in to their flight prior to arriving at the airport online or through a mobile application, many airline stakeholders mentioned that they have been observing a rise in digital adoption over the years with around 60-75% of customers utilizing this service. These stakeholders believe that this rate will continue rising with a majority of customers having the means (a mobile device) to complete digital forms.

"[MODERATOR: What proportion of your passengers would you expect to be able to have a device that they could use?] The last thing I heard, I want to say it's in the 60 to 75% range? I think that's growing. The areas where we don't see that is obviously children, or unaccompanied minors, young travelers as we call them, which is under the age of 18. And then also, some of our older passengers. I don't know the exact range, but I would say over the age of 70." (Domestic Airline)

"We are, I would say in the high 70's of customers that are actually checking in before they get to the airport, which is quite a few customers. So, they're using, and then the good majority of customers are using our mobile phone in some facet, whether that be our app, or whether that be our website on the phone. So, I think we're getting there." (Domestic Airline)

- 2.1.1.1: It was mentioned by a domestic airline that Hawai'i residents account for a smaller proportion of those with mobile devices. This may imply a larger barrier toward digital adoption among Hawai'i residents and have inadvertent effects on the reported visitor and resident counts derived from the In-flight Form.

"We know that our customers that travel from Hawai'i to the mainland and back, there's a significant population that do not have smart devices, because of how long it took Internet to get to the islands. And a lot of them have flip phones still. And we see it all the time, especially in the amount of construction workers that we fly inter island, is that they don't have a smartphone so they don't come they don't check in or they don't have a home computer as well. [...] So, I think that's a risk as well for some locals flying to the mainland to going Vegas and the ninth Island coming back, they may not have that ability to complete that form. And whether that would be required for residents." (Domestic Airline)

2.2: SIMPLE & EASY-TO-USE

- 2.2.1: The Form Needs to Be Simple and Easy-to-Use:** A common theme revolving around the user experience was the need for a simple and easy-to-use platform to encourage the adoption of a digital In-flight Form.

"It should be something that's fairly simple for the passenger to use. Otherwise, I would hate for them to just not use it. And then we don't get the benefits that we're hoping for. And I just hope that whatever way that it's devised, that it's something that's also not going to be economically difficult to maintain. Because those kinds of projects tend to just fall by the wayside after a while." (Department of Agriculture)

- 2.2.1.1: In terms of simplicity, many mentioned that the digital form should feature as few questions as possible to encourage compliance. Should the form be too lengthy, passengers may be discouraged from completing the information or doing such with attention to detail.

"If we can reduce fields, if you make it easy to fill out by ensuring that it works really well on a mobile device, things like that will also help with your adoption quite a bit." (Domestic Airline)

"Ease. Don't have too many questions, right? You'll be asked to be, just a couple of swipes. So, I don't know how many tourism questions there are on that side of the page, but should be less than 10 questions. Anything more, you're going to lose interest from the public. And the questions got to be simple, but very pointed, and very timely." (State Senator)

"I think length of form is gonna help with compliance. I think if they see 100 questions, they're less likely to do it than if they see one or two questions. So, kind of clearly mark like the HDOA section is mandatory, you must fill out this one or two questions." (State Representative)

- 2.2.1.2: As some questions can be answered in multiple formats, it was suggested that data entry for customers needs to be flexible and address consistency on the back-end.

"There needs to be a certain level of flexibility in how people respond without, 'You must have comma following 1000s digit and...' If you do that, it's going to take forever for people. They'll get frustrated, and it's going to reflect poorly on everybody." (Domestic Airline)

- 2.2.1.3: Given that customers will likely need some direction from the airlines' ground crews or flight attendants, some stakeholders mentioned that the process needs to be clear enough for staff to explain and for passengers to complete once accessing the form digitally.

"I'm just saying that it's really clear for guests what's expected of them, and it's easy for us to communicate that to them: have them complete the process and get a great experience when they arrive in Hawai'i." (Domestic Airline)

"Our flight attendants and our gate agents, when they make announcements we, because they memorize everything, we need to make sure that we give them a very simple and clear place to send people. And so, whether it's check your [DOMESTIC AIRLINE] app, or open the entertainment portal and a pop up will show up for you, giving them just like simple tidbits to send people to a very clear direction that people can get to without much help is important for us from that communication perspective." (Domestic Airline)

- 2.2.1.4: With many passengers being either residents of the State or repeat visitors, it was mentioned that it would be appealing to incorporate a feature that would allow passengers to save their information, making the form quicker to complete during future trips.

"The whole thing about that Ag Form for me is, and I travel back and forth a lot, is having to put my information over and over and over again. That's my information like [NAME], my address, right? So, if all of that stuff, if I can create an account or something that, where it has all that stuff in, I just got the check the box, what flight I'm on, check the box that I don't have anything that's concerning." (Domestic Airline)

- 2.2.5: Looking back to the Safe Travels program, some felt having to use a mobile app was cumbersome and that the digital form should be easier to access.

"Like the people flying, we want it easiest for them. Easiest for them to fill out at least our half of the form. So, I think that's why, [NAME] will probably touch on similar, but that's where we want just whatever's easiest for them where they don't have to go multiple apps. And because we just think of Safe travels, and how that how cumbersome that was. So, we just want easiest for them. That's reasonable for all of us." (Department of Agriculture)

2.3: ACCESSIBILITY

- **2.3.1: Accessibility Options Should Be Considered:** Considering that some passengers may have disabilities hindering their ability to complete a digital form, it was suggested that accessibility options should be considered to make the user experience more equitable.

"For people with disabilities, it needs blind accessibility. I would say hearing accessibility, but I don't really imagine it making sounds. So at least blind accessibility for sure." (State Representative)

2.4: TECHNICAL COMPONENTS

- **2.4.1: Ability to Complete Online and Offline:** While a majority of passengers utilize mobile devices, there are several points during a passenger's journey where connectivity can become an issue potentially requiring a platform that can operate both online and offline.

"I think that connectivity at different points of the journey is sometimes an issue, especially if you have somebody who's an international visitor to the United States. Sometimes they don't purchase roaming plans. And generally speaking, and this might be a little bit controversial, people like to use cellular, especially in public places, rather than public Wi-Fi because I think mostly because of security concerns. And when, obviously, airports are a lot of concrete, and there's concentrations of devices and things like that, and sometimes networks get bogged down, slow down." (Domestic Airline)

- **2.4.2: Send a Follow-Up/Confirmation Upon Completion:** After completing the agricultural form and tourism survey, it was mentioned that a follow-up email sent to passengers to confirm their submission will provide both the customer and airline with proof of completion should it be needed for compliance.

"Make sure that once that's done and they hit submit, the answer is okay and they get an email back, or a text back that says, 'Tourism form complete.' And it's that simple because otherwise you get into, well, if it's more than that, you get back into whether it's a green screen, a yellow screen or reds, you know." (Domestic Airline)

2.5: MAINTAINING A PAPER OPTION

- **2.5.1: A Paper Option May Need to Be Maintained:** While 100% digital adoption would be the ideal scenario in digitizing the In-flight Form, there are many barriers that would prevent some customers from making the switch to digital including not owning a mobile device, not being comfortable using digital platforms, or religious beliefs preventing the use of personal devices. For this reason, some suggested that a hybrid format, where paper forms are still readily available, would be necessary to receive full compliance.

"We do know of course that there may be folks that don't have a smartphone or don't have access to it or just aren't comfortable with it. So, we would have some just limited, you know, supply of the paper version. Hopefully with the intent, intention that that would eventually phase out completely. But in the beginning, we believe that probably the paper version would be needed." (Domestic Airline)

[MODERATOR: Is the assumption that it's not really going to be feasible to get to 100% digital, that there would still need to be a paper form involved in the process for some passengers?] I would think so. Phones run out of batteries, they get damaged in travel, things like that. There's this kind of lowest common denominator of paper. I would also say. We do serve Hawai'i from Salt Lake City and LDS (Latter-day Saints) missionaries are not allowed to use personal technology. So, that is a consideration. We serve a very diverse customer base, and some of that includes people who do not have access to personal devices." (Domestic Airline)

- 2.5.1.1: With some passengers having data privacy concerns, it was shared that some people may be more comfortable sharing information through a physical form.

"There's folks that, just as [NAME] mentioned to the privacy side, they just don't want to interact with devices, right? Electronic devices. So, okay, here's the paper, but that would be like the last resort." (Office of Enterprise Technology Services)

- 2.5.1.2: While a hybrid format would make the form more accessible, it was mentioned that offering the combination would be costly to maintain.

"If you're looking at enforcement or operation or all of those things, there's going to be lacks of continuity. No matter which way you approach it unfortunately, a nightmare... considering who may have filled it out, who may have, who may not have would just be very difficult from a cost perspective." (Department of Transportation)

- 2.5.1.3: Even though there was a common sentiment that a hybrid format is needed, it was mentioned that 100% digital is possible as was seen with Safe Travels, albeit there were many issues that arose from the process.

"No. We switched. And Safe Travels, we switched to digital. No paper. So, I can't say that, I mean there were a lot of problems in the end and a little issues along the way, but we ended up switching. So, I can't say that (paper forms are) necessary." (Hawai'i Tourism Authority)

2.6: SELF-SERVICE

- **2.6.1: There is a Push for Self-Service:** Resulting from the COVID-19 pandemic and general movement toward digital adoption, some airline stakeholders mentioned that there has been a rise in customers that want self-service, implying that there may be some level of acceptance towards the digitization of the In-flight Form and/or incorporation into other self-services features of the airport experience.

"There are customers who are craving self-service ways to improve their travel. And what we're finding is people are doing their homework. If there's a silver lining to COVID, it was this whole idea that there are destination requirements, right? And you can't just buy a ticket and expect to show up, right? We are seeing people who are signing up for precheck and only fly a couple of times a year. We're finding people calling in advance to make sure that they're completely prepared. Things like that, I think, are more common now. The biggest thing is customers want self-service." (Domestic Airline)

- 2.6.1.1: While there is a rise in self-service demand, it was mentioned that there will still always be a select few passengers who prefer to interact with a person and tangible documents. In particular, this is most predominately noticed among older travelers.

"There's generally a movement toward digital self-service, and there's a movement to handheld devices from desktop computers. That's a general trend that we see. But it varies very substantially by demographic. And there are still travelers who have a strong preference to interact with a person and get a paper boarding pass. And so, I think even if adoption is generally moving in the direction of digital tools, there will still be a segment of the population for whom that is difficult to drive adoption." (Domestic Airline)

2.7: LANGUAGE REQUIREMENTS

- **2.7.1: Language Requirements Vary by Airline:** Considering what languages they would like the In-flight Form to be offered in, there were varying responses among airlines. Some airlines required Spanish while others mentioned that it would be highly beneficial to have the form in Chinese,

Japanese, and Korean. Overall, offering the digital form in multiple languages will not only cater to the needs of airlines but also ensure a greater level of compliance and data accuracy.

"I think we would go and look at the arrivals to Hawai'i by air by country and come up with, I mean, we obviously need, it would be helpful to have Japanese and Korean. Chinese." (Domestic Airline)

"At this point, just English and Spanish are the primary languages that we support in our digital channels." (Domestic Airline)

"Our website is, I'm gonna say 14 languages. Don't quote me on that. But it has quite a few. And our notifications right now I would have to get back to you. I know they are in English and Spanish. And we are talking about getting them in other languages as well." (Domestic Airline)

2.8: ONE FORM PER PARTY

- **2.8.1: One Form Per Party Preferred:** Across all stakeholder discussions, a majority of participants agreed that only one completed form per party should be required; this decision mostly resulted from the inability to require a small child to complete the form. It was also mentioned that having multiple members of a party complete a form may result in redundant information.

"I think one per family, because especially when it comes to kids, how are you going to.. And it does make it I think compliance is easier if it's just one person." (State Representative)

"I think that head of household, if that's the current approach, that sticking with that is a good one. I mean, if you're traveling with a family, then you've got your hands full anyway. And handing a five-year-old a form seems ambitious. I would also say that you're gonna get a lot of redundant information if it's people traveling together." (Domestic Airline)

"I think if a parent has to fill it out for their three children is taking time. I think that's more of a hassle. So, if they're able to complete one form per party or family, I think that's also why you see an even higher adoption rate." (Domestic Airline)

- 2.8.1.1: It was suggested that should more granular information be needed, the head of a party could represent a party and complete subset information for each party member.

"I think it's digitally done, then it's easy because then you have a bunch of information that's for the whole party. And then you can have some information that might be relevant for subgroups in the party. And if that's during the questionnaire, if you answer accordingly, on one of the questions, you could have additional questions like, do you want to fill out the sub questions for each of the party members?" (Economist)

- 2.8.1.2: While most agreed that one per household is sufficient, it was mentioned that doing so makes it more difficult to enforce compliance.

"Because the Ag Form does say one per family, and to be honest with you, when [GROUP] used to go on trips, if there are four or five of us we say we're all in one family. Four males, basically, traveling together, because we just didn't want to fill out the form. You're not going to challenge anybody if they said, 'Okay, this is my family.'" (Department of Transportation)

3: APPLICATION FUNCTIONALITY

3.1: NOTIFICATION SYSTEM

Some stakeholders proposed using airlines' current alert or notification systems to communicate with passengers about completing the agricultural declaration and tourism survey prior to their flight. Many airlines saw linking to a State-hosted site as being a practical solution that they could implement into their systems.

- **3.1.1: Easier Solution Than Back-End Programming:** Compared to other proposed solutions, it was mentioned that utilizing current notification systems and emails to distribute a link to the State-hosted form would be easier to implement than having to program the form on the back-end of their systems.

"We issue emails already for confirmations and stuff. [...] I think that is the sort of thing that probably would be easier to set up, than a wholesale programming of a form into our back-end systems." (Domestic Airline)

"Yeah, we could add that into our notifications of saying, 'Hey, by the way, you can fill this form out before you leave.' That shouldn't be a hard thing for us to do." (Domestic Airline)

- 3.1.2.1: Some airlines mentioned that they would be happy to integrate a link into their current notifications that they already send to customers prior to their flight.

". So, that's that 10-day notification that I mentioned. And there, we give you different tips and tricks, of our what to expect, right? As well as some different tips and tricks. So, yeah, I think we could do that there." (Domestic Airline)

- **3.1.2: Utilize a Pop-up Message to Reach Customers:** A couple airlines shared that their current platforms would allow them to send a pop-up notification to their customers prior to their flight or upon check-in reminding them to complete the form before landing. It was mentioned that there is some degree of customizing in terms of the text that is displayed, but there also may be issues such as the notification going to someone who has already completed the form.

"So what it would be is a little white pop-up that would come up and have [DOMESTIC AIRLINE]'s logo on it. We have one line of bold text that we can do, and one line of regular text to add a description. And then there's a button that says, we could do like 'Take me there or close' or 'Fill out forms or close'. [...] It wouldn't be able to recognize if someone already filled that out. So, they would get that pop-up every time they enter that, whatever page that we want that to be on. But there'd be able to be messaging to say this is required, please complete this within the day of travel, this is required by law of Hawai'i to complete this prior to arrival on the islands." (Domestic Airline)

"Yes, that that would be little bit easier than creating the form internally in our systems. Because that we can program like the messages to pop up during check in that sort of thing to say hey, you need to go here to fill out your Hawai'i agriculture form, right? So, that that can be done and has been done for other things that are unique to individual cities. So, that that would be easier." (Domestic Airline)

- **3.1.3: Ability to Send Notification to All Passengers or Party Lead:** Depending on the airline's system, it was shared that notifications could be distributed either to all passengers with contact information on file or to the first person on the booking who is likely to be the head-of-household or their spouse.

"It depends on the notification we target. We have some communications that go to everyone that we have contact information for on the PNR (Passenger Name Record) on the booking. We have others, I believe, that just go to sort of the first person on the booking which could be head of household. My husband and I take turns booking our trips, right? So, I think it could change. But I imagine for your purposes, I don't think that that would make a huge difference." (Domestic Airline)

- **3.1.4: Some Costs Associated with Notification System:** While not as expensive to implement as other options, it was mentioned that there will likely be some costs assumed by airlines in adding a specific notification for Hawai'i-bound flights to their systems. This cost could potentially grow should the notification be distributed in-flight, requiring the airline to provide passengers with connectivity to complete it online.

"There's the resourcing cost of just, how much time and effort does it take for us to develop the process internally to deliver the digital notification as well as the digital verification if there is such a thing? And then, if we were to make it available in-flight, we would incur the cost of the data consuming or accessing the form and completing the form. So, that's a that's a cost that we would bear." (Domestic Airline)

3.2: HYPERLINK TO STATE-MANAGED WEBSITE

Considering the cost and planning involved in integrating a digital form into each airline's unique system, many stakeholders suggested that a single data collection point should be hosted by the State of Hawai'i with airlines providing a link to passengers that leads to a web-based form. This link could be added to airline notification or within other platforms that they offer their customers.

"Yeah, and that site is universal, right? So if you just have people pointing to it, all the different carriers could hyperlink to it and or a customer could visit a State of Hawai'i website and enter through that way, right? So, you can have all sorts of different front doors, and then only have one platform to manage." (Domestic Airline)

- **3.2.1: Distributed via Airline Mobile Applications and Websites:** With many airline passengers going through their carrier's mobile application or website to book flights, check in, and manage other flight details, it was suggested that these platforms would be an ideal place to communicate the form requirements to customers with upcoming trips to Hawai'i.

"We have a lot of precedent for, not necessarily always having dedicated communications, but embedding certain flags and alerts and communications to customers. We would also have the ability, depending on how far in advance customers can do this and what makes sense, we could also have 'com' and app placements, banners and things that alert customers and link them over. A little push and pull." (Domestic Airline)

- **3.2.2: Link Needs to Remain the Same:** With some carriers sharing that they would integrate the link into their digital portals, it was mentioned that changing the link after implementation will come at a cost to the airline and they, therefore, would prefer for it to remain the same.

"Whatever link you use, we would then use that to program all the features of our digital and Portal elements. And then that way, as you guys make changes, hopefully the link stays the same. Because anytime we change the link, there would be an associated cost for us with our Wi-Fi providers. So, making sure that that link stays the same in perpetuity. And then you guys can make updates on the back end, whoever you feel you need to, that would be our preference there." (Domestic Airline)

3.3: EMBEDDED IN AIRLINE WEBSITE/MOBILE APPLICATION

While airline stakeholders were reluctant to integrate the form directly into their website or mobile application due to the associated costs and concerns about data privacy, some state departments and legislatures were inclined to see the agricultural declaration form and tourism survey directly available in these systems. It was suggested that this may actually encourage passengers to download their carrier's app knowing that the form can be completed there.

"People that are more comfortable, there's a segment of population that we're comfortable with, anytime we do, we submit information, we're doing it computer, but more often they're on mobile devices. And I think there's opportunity there, right? To somehow leverage putting the onus on the airlines. But perhaps maybe their spin is that, if they could, maybe there's a framework or form standards that's developed, and they incorporate it into their own app, their mobile app, which it's one way you encourage passengers to actually download the app. 'Hey oh, by the way, we've got a Ag Form that's required. You gotta, you can just open up the app while you're here.'" (Office of Enterprise Technology Services)

- **3.3.1: Develop an Application Program Interface (API) for Airlines to Utilize:** By developing an API that would allow airlines to connect the form database with their mobile applications, it was shared that airlines may be more interested in integrating the form into their current platforms.

"If there was an API and the airlines were basically, like they could choose whether to use the paper form or integrate their system to an API. And then it would be kind of like per airline. And obviously, you know, once one airline does it, and it's much easier for the passenger every, there would be a huge incentive for every other airline to do it." (Office of Enterprise Technology Services)

- **3.3.2: State Develops Form HTML Code for Airlines:** It was suggested that the State of Hawai'i could develop the necessary HTML code to implement the form on a webpage making it easier for airlines to link to it within their website.

"I was just thinking from IT perspective, we would host the form until all the data that gets into the, whatever we put in HTML, the link and that would be hosted by us. So, we have access to, no matter what, at all times, to see who answers what. And I was just thinking that same code could be used across multiple airlines so they would just have to, they would all use the same form code, or whatever HTML, and just put it into their site." (Department of Agriculture)

- **3.3.3: Integrating into Digital Portals Would Be Costly:** Beyond embedding a link to the form into each carrier's website/mobile application, it was also suggested that it be integrated into airline's digital portals. However, an airline stakeholder shared that this would be costly to implement.

"I think first and foremost, is probably cost. For us, we think it's, in order to do all the work which would include digital and portal, and specifically the in-flight entertainment portal would cost, is anywhere from \$150,000 to \$200,000. In order to implement this, we don't see it being a recurring cost. But that would kind of be our kickoff in order to get the coding and the whitelisting and all that done, because it is vendors that manage our Wi-Fi. We don't have our own satellites, it's [SATELLITE COMPANY] and [SATELLITE COMPANY] are our two Wi-Fi providers. So, we would need to go through PI planning, get the work prioritized, and fund that work in order to do that." (Domestic Airline)

3.4: STATE-MANAGED MOBILE APPLICATION

Another proposed idea was a State-hosted application which passengers would need to download to complete the form similar to the Safe Travels application. This application could be used solely for the purpose of collecting form information or be integrated with other Hawai'i-specific services.

- **3.4.1: Used for Compliance Checking:** Similar to Safe Travels, one format of the application could be to house the necessary forms and display a confirmation message upon completion; this confirmation would be used to ensure compliance by whichever entity is in charge of checking. While the process was described as cumbersome for passengers in the context of Safe Travels, it was mentioned that a similar process for the agricultural declaration form should not have too much impact on the check-in process.

"I would think that there would need to be some sort of app and or, I'm trying to think back to when we had COVID and you had to fill out some of the forms and stuff, I'd say it was kind of cumbersome. It really was cumbersome. But it wasn't a part of something that the airlines did, it was something the customer did. And then the customer showed the airline, they'd completed it before they boarded. And that's more along the line, I think you could make work without severely disrupting the check-in process of the gate processing times. You know, you get the green screen or the checkmarks green. 'Yes, I filled this out', you show them show that as you board, and away you go." (Domestic Airline)

- **3.4.2: Can Store Information for Future Trips:** For residents of the State and repeat visitors, one benefit of adopting a mobile application would be the ability to store personal information, making the form completion quicker on subsequent trips; this may be easier to implement for residents than repeat visitors.

"One aspect of Safe Travels was that people got accounts. So, you had an account so next time you traveled, it was much easier. But I don't know if it would be realistic for this scenario. But obviously, your name would already be kind of prefilled. But the destination might be different so, it might be right? And of course, for the residents, it would be most likely in a very high percentage of the addresses would stay the same for residents. So that aspect of like, would there be an account? And therefore, have it prefilled and make it much faster." (Office of Enterprise Technology Services)

- **3.4.3: Ability to Expand Functionality to Include Other Hawai'i Services:** Several stakeholders mentioned the idea of creating a mobile application that would not only host the agricultural declaration form and tourism survey, but also other Hawai'i travel information and services such as reservations and sustainable tourism activities and messaging.

"Thing is that if it's tied to anything else, that information for example, if they use it and they finish and complete the form, perhaps it could be tied or used in other types of registrations in the state. The information could be automatically.. if the passenger decides to click it over to use it when they have to fill out something to go to visit any of the parks or any types of other types of recreation, either in private industry.." (Department of Agriculture)

"I think if we're going to go through all this trouble of creating an app or some kind of a digital form, it's a huge missed opportunity, if we don't also include other things like visitor education, how to have a good time when you're here, snorkel safety, you know, just an opportunity for more engagement, to produce the kind of visitors that we really want here the kind of that are respectful, thoughtful, that aren't going to die on their vacation. Yeah, so I would like to see some consideration to content, some consideration and maybe even recommendations about content." (State Representative)

- **3.4.4: Mobile Apps Have Lower Adoption:** A concern expressed about housing the form in a mobile application is that there is still a large group of people who do not want to install additional applications on their phone and prefer to go through web browsers.

"I would say that using app adoption as a guide, it's about 50/50. But this is, I think, also going to come down to a lot of people who don't fly us regularly don't want to install a native app. So, if you make it lightweight, you make it something that is browser accessible, there's a lot of younger people who don't like native apps and want to stick with browsers and things like that. I think that that's where there is upside versus the 50/50." (Domestic Airline)

3.5: INTEGRATED WITH CHECK-IN

As an optimal method to ensure compliance, several stakeholders proposed the idea of integrating the form into the check-in process for all passengers flying to Hawai'i. In practice, this process could be similar to the current attestation process for passengers checking in bags or a link provided at check-in that needs to be completed before receiving a boarding pass.

- 3.5.1: Airlines Worry About Making Check-In More Complex:** With airlines trying to make the check-in process for passengers as seamless as possible, some stakeholders worry that adding the agricultural declaration form to check-in will make the process more difficult and time-consuming than it already is.

"It worries me that we're creating, in addition to some programming and technology challenges, that you're going to add length of time at check in for when people have to manually check-in with our agents, which could severely disrupt the flow of the operation, or that you make the check-in process more complex than it already is." (Domestic Airline)

"The check-in transaction increasingly is, standing in front of the security view, getting out of the back seat of an Uber; it needs to be as quick as possible to get a boarding pass. To [NAME]'s point, additional steps are steps of frustration. [...] Yeah, it's appealing because everyone has to check-in, but it's not the right time or place to ask for a lot of information." (Domestic Airline)

"I don't want to inhibit check-in for this. Because I mean, anticipation is one thing, if I'm just kind of reading and checking the box, that's fine. But if it's like, I have to go somewhere, fill out this stuff, and then come back and prove it, that's where it gets a little challenging for us." (Domestic Airline)

- 3.5.2: Physical Checks Require More Manpower:** Should airlines be required to check forms at check-in, some worry that more manpower will be needed at the airport with agents either confirming completion through an application or paper form.

"The only other aspect would be if there is some sort of requirements to verify the fields are filled in prior to departure, or prior to when guest are in the air on the aircraft. We would have to institute some sort of process like we have the passport verification, or like I said earlier, what we do is verify before, which would add complexity to the airport experience and potentially require us to have extra manpower. I don't think any of us want to go down that pathway." (Domestic Airline)

- 3.5.3: Legacy Systems Make It Difficult to Implement:** With some airlines having their check-in process built off legacy systems, it was shared that an overhaul of the process to include the agricultural declaration form would be costly and time consuming.

"Underneath the systems that we use today is this legacy system that is robust. It does what it does. It's very reliable. It gets the job done. But making changes to it is incredibly difficult. As so, it is very time consuming and very expensive to modify this, the base layer, that processes everything. So that

all of a sudden is happening on the back end, the stuff you don't see underneath the GUI (Graphical User Interface)." (Domestic Airline)

- **3.5.4: Some Airlines Can Incorporate with Attestation:** While some carriers are working with legacy systems that are difficult to change, others shared that this type of integration would be feasible.

"[MODERATOR: Do you have the ability to have a destination-specific attestation added to that? In other words, if it was flying to Hawai'i, could the Ag Form attestation be added to that process within your systems or is that is that not really feasible?] It's totally feasible for us to do." (Domestic Airline)

- **3.5.5: Airlines Worry This May Cause Passengers to Abandon Check-In:** Should the form be provided as a link that requires passengers to exit the check-in process to complete, some airline stakeholders shared concerns that it may cause passengers to inadvertently abandon check-in.

"It's unlikely that we would introduce a place for them to sort of exit the check-in process right in the middle of it. It's possible we can leverage some banners or things after check-in in the app, for example, or in of course, on '.com'. But I don't think that we would encourage customers to abandon the check-in process." (Domestic Airline)

"I don't want to bump customers out of the check-in flow to go to your site, and then not get them back to come in and check-in." (Domestic Airline)

- **3.5.6: Could Help Ensure 100% Compliance:** By requiring the form to be completed at check-in, some shared that the process would benefit from having 100% compliance as every passenger would need to complete the form in order to receive a boarding pass.

"If we digitize it, it pretty much would be 100% compliance. Because you wouldn't be able to, at least if we had it the way we envision it, you wouldn't be able to check-in unless you completed that question. So that would be 100% compliance." (Department of Agriculture)

3.6: DIVERSE AIRLINE SYSTEMS

With each airline operating unique platforms, some fear that requiring the form to be integrated into each airline's systems would be costly and difficult. This issue not only applies to the agricultural declaration form and tourism survey, but also extends to sharing flight passenger counts.

"One of the things to think about, as we move into a world in which things are digitized, is that anything that involves integration into airline systems is very fraught because every airline has its own technology systems. And, the cost associated with changing those or doing integrations is very high. And so, it is something, anything that involves data moving back and forth between airlines and the State would be very complicated. It's one thing to point people to a State website to fill out a form. It's another thing entirely if you want to start getting data, even relatively simple data like passenger counts, transmitted

from a bunch of different airlines to some sort of central place. That is going to be a real challenge."
(Domestic Airline)

3.7: COLLECTION TIMELINE

- **3.7.1: Up to 24 Hours Prior to Flight:** Several stakeholders shared that offering the form prior to a flight's departure may be important when shifting to a digital form.

"In my experience, customers don't like to fill stuff out. Like if they can do it beforehand, that's helpful."
(Domestic Airline)

"This could be done before people get on the plane or when they disembark. Was probably better before because after that people are rushing and want to get to everything. But while they're waiting for actually getting on the plane, there could be screens where they could actually just fill out the whole questionnaire, both sides and whatever." (Economist)

- 3.7.1.1: A suggestion among stakeholders was to allow the form to be completed within the 24 hours before a flight's departure, aligning with the ability to check in to flights as early as 24 hours prior. This would not only provide passengers with the convenience of filling out the form ahead of time, but also give airlines adequate time to distribute notifications to their customers.

"[MODERATOR: What would be the ideal timing for you all in terms of when folks would complete this form?] For me, I would say it's anytime on the day of travel. We have a number of resources outside of the in-flight environment that we can utilize, that we can leverage to get folks' awareness of this form, and to get them completed, such as our pre trip email series that happens, that sends 24 hours prior to departure." (Domestic Airline)

- 3.7.1.2: Because some airlines do not provide passengers with internet access, it was mentioned that completing the form pre/post flight would be necessary for a digital form.

"Flying to Hawai'i means we go across the water which means there's not really good Internet access. So, if an application is purely tied to an Internet-only application, you can only do it when you're onboarding or deplaning within the travel and not during the flight itself." (Office of Enterprise Technology Services)

- 3.7.1.3: While completing the form in advance is convenient, providing it too far out may cause passengers to complete the form before they even pack their bags hindering the validity of data for the agricultural declaration form.

"[SPEAKER 1] And doesn't the Ag warn, you're declaring that you don't have anything on you, right? [SPEAKER 2] Yeah. Plants and animals currently on you. So, it's collected. That's why it's collected the way it's collected, right? So, I don't know, if you're doing it three days in advance of your departure, do you declare that you will not?" (State Research Vendor)

- 3.7.1.4: With flights being delayed or canceled, filling out the form in advance may lead to errors in the data that would need to be corrected after the fact.

"It actually happens all the time. And then you have to deal with those guys. Oh, they got or the plane is delayed, you totally screw up your date. So, they could have filled it out saying landing today, but it gets delayed until tomorrow. You're screwed. And it has happened. And you have to make all kinds of adjustments for that." (Hawai'i Tourism Authority)

- **3.7.2: In-Flight Has a Captive Audience:** While collecting the data in-flight comes with considerations such as Wi-Fi connectivity, many stakeholders mentioned that the current process benefits from this timeline as passengers are a captive audience making them much more likely to fill out the form.

"I honestly don't think there's any better place to do it than in-flight when you've got everyone captive [and] can receive the message in the given the form. I think any other point is either going to reduce your compliance rate very substantially or add the need for some sort of compliance check that is going to disrupt the travel experience substantially." (Domestic Airline)

"But, I think if you want a captive audience, it's kind of the way that we're doing it today." (Domestic Airline)

3.8: INTERCEPT FOR TOURISM SURVEY

A possible scenario in digitization would be to separate the tourism survey and the agricultural declaration form (see Section 4.5). Should this happen, the tourism survey may need to take the form of an intercept survey at the airport relying on gathering a sample of passengers compared to a census approach.

- **3.8.1: Intercept Surveys Would Be Costly:** Having to staff a crew at the airport to provide intercept tourism surveys was mentioned to be a very costly solution, especially if attempting to reach similar sample sizes to what is gathered now with the In-flight Form.

"You're talking big bucks, huge bucks if we're still going to be looking at every point of domestic arrival. So it'd be the Kona airport to Līhu'e airport. Hilo has nothing right now. The smaller islands have nothing now. But Maui, I mean, as well as O'ahu maybe. You're talking huge bucks, I mean, millions of dollars if the intendant approach is a census approach." (State Research Vendor)

"But we have to send people to the airport to do intercept survey and the sample size may be from somewhere around 300 to 400,000 a month, 300 to 400 a month, down to maybe we're looking at

maybe 8,000. We don't want to reduce too much, but maybe 8,000 to 10,000 a month. That would need a lot of manpower." (DBEDT Research Division)

- **3.8.2: VSAT Email Collections Would Be Directly Impacted:** With the Visitor Satisfaction and Activity Survey (VSAT) being distributed to the email list gathered through the In-flight Form, an intercept tourism survey at the airport would be necessary to continue receiving emails to distribute the VSAT survey to.

"The airport [VSAT] surveys are done as an online survey on an iPad. So, it is a self-administered survey, whether you get it via email or whether you're intercepted at the airport, you're doing it digitally. It's just that at the airport, you're doing it in front of you while you're at the gate. If you get it via email, it's slightly- likely after your return, it is after you return home. And those intercept surveys are only among international visitors. Because we get enough sample for email of email addresses from the In-flight Form. If it were not for the In-flight Form sample of email addresses, we would have to intercept or find another way to reach U.S. and Canadian visitors." (State Research Vendor)

4: DATA

4.1: DATA UTILIZATION – AGRICULTURAL DECLARATION FORM

- **4.1.1: Contact Information is Important for Follow-Up:** Being the primary purpose of the agricultural declaration form, HDOA relies on the contact information provided to follow up with any passenger who may have declared an item not allowed in the State but were not intercepted at the airport.

"[MODERATOR: How important is the contact information that's provided on the Ag form for your purposes?] Very, very important. Because if there's any follow up questioning that we have to do, we need to reach that person. And sometimes, yeah, that the information is not complete, or it's dated, or the information may be, you know, the person's departure phone number. It's not a cellphone, for example. It's a landline on Kansas." (Department of Agriculture)

- **4.1.2: Helps Identity Animals Not in AIS:** When regulated animals enter the State, the agricultural declaration form allows the HDOA to compare declaration records against records in the AIS system to see if there is an animal entering that should not be.

"Right now, the only thing it does for us is it flags us if somebody is bringing in some type of animal that we regulate. If the owner goes ahead and declares it, then the staff can check the declaration against records in the AIS system, to see if there's one there. And if it's not, it's even more important that we intercept that animal when it comes in, because that means it hasn't provided, we don't know anyway, whether or not it's qualified for being released." (Department of Agriculture)

- **4.1.3: Supplement Missing Tourism Form Data:** If a visitor does not add their zip code to the tourism survey, occasionally the data from the agricultural declaration form will be used to fill in this missing information.

"The other side tourism. We wouldn't link them back in my day. I mean, unless if they didn't fill out the zip code on the visitor side. Then we borrow the zip code from the Ag side." (State Research Vendor)

4.2: DATA UTILIZATION – TOURISM SURVEY

- **4.2.1: Some Tourism Data Utilized by Airlines:** While not all airlines utilize the tourism data from the In-flight Form, those that do find it useful for understanding historical visitor trends and planning of airline operations.

"I would say yes, we do. There are just overall, like historical data, that we like to look at, right? The amount of people coming from the U.S. West and overall. So, I will say that from time to time we do use that data. It is useful." (Domestic Airline)

"We do have relationships right with the visitor's bureau, HTA, entities like that where we, to I think maybe where you're headed, where the data on where folks are staying, how are hotel bookings looking, what's going on, right? All of that is helpful. I know that our teams do look, our like network planning teams and folks like that, do look at that data when it's provided." (Domestic Airline)

- **4.2.2: Email Field Is Used for Visitor Satisfaction and Activity Survey:** The VSAT survey for DBEDT is currently dependent on the email address field located on the tourism survey side of the In-flight Form; the email is used to contact randomly selected potential respondents.

"It is highly dependent on the availability of the sample from the In-flight Form, in whatever form that is, and whether that's email address or mailing address. The VSAT survey has always been, as far as I know, it's always been dependent on, to a large extent, the In-flight Form contact information." (State Research Vendor)

"But it also, as you know, the In-flight Forms feed the email addresses which go into VSAT. So, you will need another source of VSAT email address." (State Research Vendor)

- **4.2.3: Zip Codes Are Used for MMAs:** The zip codes provided on the tourism survey are used to report MMAs (Major Market Areas), which is important for some state tourism research projects.

"The zip code is, is critical to reporting for MMA, by MMA." (State Research Vendor)

"The main use of the form, there are several. One, those agriculture forms is, we use them to report the visitor statistics, characteristics mainly, where they are coming from, in terms of by state, even by MMA, even by zip code. So, they report their area zip code as well. And of course, by country, some of them may not be coming immediately from the Mainland. A lot of European people, they come through the Mainland, but they are from foreign country. So, one is the data are used for the visitor statistics, mainly the visitor characteristics." (DBEDT Research Division)

"So, as I think about the form and going through the form, and what I use, or going through the monthly report, right off the top, where people are coming from. Where they originate." (Economist)

- **4.2.4: Used for Competitive Comparisons:** The tourism survey has proven useful to third-party vendors who use the data to conduct competitive market analysis of the Hawai'i visitor market to those in other states.

"We use it for competitive comparisons... we do work for Hawai'i, but we also do work for other states and they have an interest in how are things going in Hawai'i. So we keep tabs on how things are going out here in terms of the arrivals and the spending, and things like that." (State Research Vendor)

- **4.2.5: Used to Profile and Track Down Passengers by HDOA:** Should a passenger declare a plant or animal that is not allowed in the State, the HDOA will sometimes reference information on the tourism survey to profile the respondent in an attempt to track them down before they leave the airport.

"So, one of the challenges is if somebody does declare, all you have, it's a piece of paper. You have their name and their address (and) if they list their phone number. So, what ends up happening is you have, how do you find this person? They say, the person declares a snake. I have your name. I have an address. It's not a Hawai'i address. Okay. So, in your mind, you're trying to find this person. Okay, this person's a tourist. So, they probably have luggage. And that's all you have. And you you're paging them with the flight attendants, you have a sign that we post you're trying to find, and you're trying to find this person. You're looking for their bags, stuff like that. So, the backside of the form gives you a little bit of extra information. I know approximately how old you are if they fill it out. I know how big their party is, that kind of stuff. So, you have a little bit of a better way of profiling these people, because that's all you're doing, you're profiling. You're trying to find the first needle in the haystack." (Department of Agriculture)

- **4.2.6: Used to Understanding How Many People Intend to Move to Hawai'i:** Within the section of the tourism survey that asks the passenger if they are a visitor to Hawai'i, intended resident moving to Hawai'i, or a returning resident, DBEDT uses the resulting data to calculate how many people are planning to move to the state.

"We also use data to estimate how many people are intended to move to Hawai'i. And because the question has, the questionnaire has one question about intended residence. So, we use that data to see how many people are planning to move to Hawai'i, or how many of these passengers, they actually plan to stay here." (DBEDT Research Division)

- 4.2.6.1: This information also helps DBEDT perform census calculation in the interim period between census data collections.

"To [NAME]'s point about that we wouldn't get, is Ag form tells DBEDT how many intended residents there are. And they use that to look at census stuff because the census is only ten, every ten years. So, they do look at that intended resident portion to try and figure out how many people are living in the state and all that kind of stuff." (Hawai'i Tourism Authority)

- **4.2.7: Used to Calculate De Facto Population for Infrastructure Planning:** By understanding how many arrivals to the state are visitors, DBEDT is able to calculate the state's de facto population. Such data informs infrastructure decisions such as the resource allocation to health care facilities needed to meet the needs of all the residents and visitors on island at any given time.

"We will use those data every year on an annual basis to calculate the de facto population. The de facto population is a key indicator or key data for the planning process, either for infrastructure planning, highways, the harbors, airport, for the parks, even for the medical preparedness. For example, we just recently completed a report on Hawai'i's healthcare industry. So, the hotel, the hospitals, we call providers, and they were really interested in how many of the visitors that actually use our facilities, hospital facilities. For example, emergency rooms, those kinds of things." (DBEDT Research Division)

- **4.2.8: Used for Destination Management Purposes:** HTA utilizes various data points from the tourism survey to inform decisions surrounding destination management.

"They give us demographic information, right? We get lodging type information. Those are the most valuable parts of this because it helps us understand where are people staying, right? Like, are they staying in a hotel? Are they staying with friends and family? When we think about destination management and the importance that that has in today's conversation around tourism, knowing where people are staying or intending to stay is a really big part of helping us say there's enough visitor inventory or not, we have enough of the right kind or not, or they're staying at illegal accommodations or not. Those are really important kinds of data that our side of the form helps us figure out. And then the extension of that is how we use it to make policy decisions, create new programs, eliminate old programs, make recommendations to other levels of government. Those are all really important considerations that only come from the detail of data, because of the kind of questions that we asked." (Hawai'i Tourism Authority)

- **4.2.9: Tourism Surveys are Interrelated:** With DBEDT conducting three primary tourism surveys, each one is interrelated meaning that a change in one will directly impact the others.

"[SPEAKER 1] And there are three primary surveys that are done. There's the In-flight Form Tourism survey that we've been talking about all along. There's the Expenditure Survey that is among all markets, right [NAME]? Or is that just international markets? [SPEAKER 2] International markets. [SPEAKER 1] And then there's the Visitor Satisfaction survey. So those are the three primary tourism surveys that DBEDT conducts. And they are interrelated because of the sample availability that comes from the In-flight Form and the Expenditure Survey." (State Research Vendor)

4.3: DATA UTILIZATION – PAX (PASSENGER) COUNT

- **4.3.1: Daily Passenger Count/7-Day Moving Average Information:** Currently, the PAX counts provided on the envelopes holding the In-flight Forms are the basis for calculating daily total passenger counts as well as 7-day moving average calculations. Should the In-flight Form become digital, this information would need to be obtained from the DOT which only distributes PAX count information on a monthly basis.

"Yeah, the HDOA data would be off of your U.S. Department of Transportation monthly data, just number of passengers on board. And that comes out with a three-month lag. [MODERATOR: So, you wouldn't have the timeliness of 24-hour turnaround?] That is a good question. I'm not sure where you would find a replacement for the data they use in the seven day moving average. Even if you put someone at the baggage claim gates to count people, you wouldn't know what flight they're coming in on. You wouldn't know who's a, it's very easy to lose count." (State Research Vendor)

"So, the information from the important envelopes is also used by [NAME] to do the daily PAX count." (DBEDT Research Division)

- 4.3.1.1: Stakeholders at DBEDT shared that the daily passenger count they post is heavily utilized and accounts for a large portion of web traffic that the organization receives.

"Daily passenger count accounts for 15% of total page views for the DBEDT website. So that's any website that starts dbedt.hawaii.gov. So, it's a pretty significant chunk alone that one page of all DBEDT views just to highlight the impact and the use of those data." (DBEDT Research Division)

4.4: DATA UTILIZATION – VISITOR ARRIVALS

- **4.4.1: Utilized for Economic Nowcasts/Forecasts to Track Travel Patterns:** Daily visitor count data provided by DBEDT is important to economists in the State who utilize the data to calculate forecasts and nowcasts related to the tourism industry.

"They're these data, this is the passenger count data that is being collected and published by DBEDT. This is, my guess is that this also informs the visitor arrivals data. There is a difference between passenger counts and visitor arrivals. In any case, the passenger count data that is the higher frequency data that informs our forecasts, and nowcasts. And nowcast is actually a prediction about the current situation of the variable that you are trying to predict. For example, we only receive information about actual tourism activity with a delay, typically looking back with a lag and if you want to know what's going on right now, we tend to look at this higher frequency daily data that helps us assess that within period travel patterns." (Economist)

- 4.4.1.1: The effects of these reports created by in-state economists trickles down to local businesses who plan their operations from this data.

"Let's say the user is a legislator, right? And so, they might be looking at the different industries, composition of different industries in this state [to] understand, how many people work in different industries? What's the growth rate for say, the tourism industry versus the healthcare industry? That would be one use case, right? They can then, based on this, they can make informed decisions about whatever comes to the desk." (Economist)

- **4.4.2: Comparisons to Internal Data:** A stakeholder at the HDOA shared about utilizing passenger count data to draw comparisons between daily passenger arrivals and animal arrivals.

"We also use the data. I know that I've used it in the past. I've gone to HTA's website and use the data to try and get a handle on arrivals to try and match it to our animal entries and, especially during COVID, for COVID first, it was kind of interesting. Arrivals and people really dropped off and so did the animals. But it seemed that over time, initially at least, the animals took off as far as coming in, but the people were slower to take off. I don't know, people were shipping animals in, and trying to get pets from the mainland or elsewhere, whereas people weren't traveling with them." (Department of Agriculture)

- **4.4.3: Legislative Stakeholders Want the Data, But Frequency Demands Differ:** Some legislative stakeholders involved in this study shared that they are interested in the passenger count data that comes from the In-flight Form. However, the frequency at which they would like it to be reported is inconsistent.

"Monthly is good enough because normally there's a report that is done that will compile it all, and then.. Monthly is actually pretty good if you ask me. But normally, when we do any kind of reporting for any of our departments, it's an annual reporting, and trends within one graph and so forth." (State Senator)

"I can deal with monthly. I mean, I don't need to find out every single day and I'm not, to be honest, if I get 30 updates a month, I'm not going to read 29 of them." (State Senator)

"I appreciate daily counts. Especially because the fluctuation for things like, maybe say Memorial Day weekend is like a bigger boost. In a very specific like, it helps us plan for specific weekends, specific holidays and events a lot better than monthly counts." (State Representative)

4.5: SEPARATING AGRICULTURAL DECLARATION FORM AND TOURISM SURVEY

- **4.5.1: Leaving the Forms Combined is Beneficial for DBEDT and HDOA:** When asking stakeholders if the agricultural declaration form and tourism survey should be separated as part of the digitization effort, DBEDT shared that leaving them combined is beneficial to both DBEDT and HDOA. For DBEDT, it provides the survey data that they need with about 73% of In-flight Forms having been completed on both sides. As for HDOA, about two thirds of the budget for the form comes from DBEDT.

"So basically, in summary, why DBEDT's involved because we are the, we need the data. And we are the bank. We fund the project. But because would think if, assuming that if the visitor portion is not included in the form, I think the budget will be a lot less for the visitor, for the In-flight Form. For example, I think the budget for HDOA will be, for that particular the agricultural form, the budget may be only about 1/3 or even less. So, we will have to increase a lot in data collection. So, because it is a win-win situation with the two forms combined and we actually get the best data, the largest sample possible, and to gather the data because a lot of people, even airline says the other side is optional, but we still have 73% of the parties, they complete the forms." (DBEDT Research Division)

- **4.5.2: Separating the Forms Opens Up International Market Collection:** By separating the two forms, it was mentioned that it could be possible to re-introduce the tourism survey into international flights depending on the determined data collection method.

"So, becoming digital, maybe the visitor side can be put back into the international market again [...] Well, it was taken out because the airlines were not, did not cooperate. But if the form is going to be implemented, or data collection being done not on the plane, then you may not have that problem anymore." (Hawai'i Tourism Authority)

- **4.5.3: Separating the Forms Requires More Education:** Separating the two forms, many visitors may not be as inclined to complete a separate tourism survey as a current motivation is believing that the whole form is mandatory. Ensuring visitors completed the optional tourism survey would require some level of education that shares the benefits associated with collecting tourism data.

"That helps because, yeah, I mean, then getting someone to fill out a voluntary visitor form, it's going to take a lot more communications and about what is the benefit to the visitor of doing this. If you do it, then you might get another survey. There is a good benefit." (State Research Vendor)

- **4.5.4: Separation May Affect Other Tourism Research Initiatives:** Heavily reliant upon the In-flight Form, it was mentioned that the VSAT survey may be directly impacted if the agricultural declaration form and tourism survey were to be separated as participation may substantially decline.

"Currently, at least before COVID, we did approximately 35,000 surveys of visitors for the Visitor Satisfaction and Activity Survey. I don't know, depending on the incidence, or depending on the response rate that we see from a digitized tourism survey, I don't know if we could achieve that same number of responses. It all depends on how many people respond and how many people provide their contact information in a digital form. The short answer is I don't know. I don't know what the impact would be. And I don't know if it would be feasible for us to continue to field that many surveys each year among visitors, if the sample was dramatically smaller, that the sample availability was less." (State Research Vendor)

5: INTEGRATION

5.1: DATA HOUSED BY STATE

- **5.1.1: Airlines Expect the State to House Form Data:** Wanting to collect as little PII (Personal Identifiable Information) as possible, airline stakeholders expected that any data collected from the digital form would be housed and maintained by the State of Hawai'i.

"We are very sensitive to any information that we collect. And it's very stringent, for us to actually collect more information from our guests or about our guests. We don't generally want to hold on to that as much as possible. So that's another reason why I would prefer this also to be a state owned and operated website so that we're not liable for the collection of all that additional data that we don't want to touch." (Domestic Airline)

"The way we would do it.. Our in-flight portal exists today. And so, what we would do is we would just program in the link of the form. And we would expect that to live on [the State's] side. And we would link customers directly to that. We don't want to store the information ourselves or something like that." (Domestic Airline)

- 5.3.1.1: It was mentioned that making it clear that the form is being conducted by the State of Hawai'i is important in preventing passengers from believing their data is being collected and stored by the airline.

"[From] the guest experience perspective, we would rather just have them go directly to the state and complete the form rather than trying to do any sort of integration. Rather, making it as clear as possible that you are housing the data. This is the organization that has your data, it's not us." (Domestic Airline)

- **5.1.2: Likely to Be Stored on Office of Enterprise Technology Services Servers:** While the HDOA shared that they would likely pay to store the data, it was shared that they would likely want to utilize servers provided by ETS.

"It would probably be us paying for it. But it probably be housed on ETS servers." (Department of Agriculture)

- **5.1.3: Could Utilize a Third Party for Data Storage:** If not being stored state-operated servers, it was mentioned that the state contracted Google to store data collected from the Safe Travels program and this could be an option for the In-flight Form. However, as the data is being collected for both HDOA and DBEDT, it was mentioned that this might not be the most effective solution.

"So ETS contracted with Google and it lived in a, on an online database. But that was Safe Travels. I don't know what would make the most sense for what we're talking about here, because it's two separate agencies." (Office of Enterprise Technology Services)

5.2: TRANSFERRING DATA

- 5.2.1: The Data Transfer Process Would Need to Be Explored:** Depending on the method implemented to digitize the In-flight Form, there may need to be some level of data transfer between airlines and Hawai'i state departments. While some airline stakeholders previously shared doing this will other governmental entities, it was not entirely clear how this is done and would need to be explored in further detail.

"We have some unique situations with ESTA (Electronic System for Travel Authorization) and OFAC (Office of Foreign Assets Control). But that would be the one place. How are we transferring the data back to you guys? Is it a direct integration? Are we sending something super manual? I'm not sure. Probably not. But those are some of the gaps I think we would need to sort through." (Domestic Airline)

"That's a big change in process. Database or whatever. How that data is going to come to us going forward..." (Hawai'i Tourism Authority)

- 5.2.2: Data Transfers Need to Continue Being Frequent:** In order to continue reporting daily/7-day moving average counts on visitor arrivals, the data from a digital form would need to continue coming in at a similar frequency to the current process. On top of this, several state departments and third-party contractors are held to regular deadlines for reporting that utilizes the in-flight data making timing important.

"My main concern is I should have the data, all the data for the month, for the previous month, I should have it by the tenth. Because I will have to check it, and then I have to export some files, to another company processing the international data set. So, there's a turnaround of data. [...] So, it's not just my responsibility. I have to meet my deadline, but she has to meet also her deadline to be able to send me back the data that I need to finish up everything." (State Research Vendor)

- 5.2.3: Make the Data Available Via an API:** It was mentioned that an API would be an effective way to allow state departments and third-party contractors to easily access the in-flight data at any given point in time and would allow them to automate certain areas of their current process.

"Ideally the data would be available through an API and we would just automate the whole acquisition to be straightforward without personal intervention. That would be the ideal situation. And I think we have a little bit of that. In fact, we partnered with [STATE DEPARTMENT] where we developed the mini data warehouse for them. And when they push data up to this warehouse, we are able, whatever data they push up there, we are able to get it via an API. [...] So, it's good. It's definitely in the move in the right direction." (Economist)

- **5.2.4: Need to Anonymize the Data:** With the data from the In-flight Form being shared with several agencies, it will be important to consider how to de-identify data that comes through digital collection.

"And from the privacy side is, not making individual records available, but do what we can about aggregating and de-identifying it. That way, you will still get the numbers and meet the spirit and business driver, but not have any pull back into individuals." (Office of Enterprise Technology Services)

5.3: SHARING PASSENGER COUNT DATA WITH THE STATE

- **5.3.1: Passenger Data Shared by Some Airlines:** Some airline stakeholders mentioned that they are easily able to produce passenger count data, with some already sharing that information with third parties. While this information may be actively shared for international flights, it was mentioned that sharing additional data for domestic flights could introduce data privacy concerns.

"We actually, with one of my partners, provided them with a feed with the number of passengers boarding on every flight, and so that they have that." (Domestic Airline)

"We certainly have the information digitally. We know exactly how many people were on the flight. There's a flight manifest. There's a list we look [at] and tell how, the counts, transmitting it to a third party. [...] Obviously, we transmit data for international flying. So, I know it can be done. You've got to make sure that you comply with whatever the privacy requirements are, and that there's no data breach, and how long is this stored?" (Domestic Airline)

- **5.3.2: Passenger Data Shared Through Global Distribution Systems:** It was mentioned that PAX count data is currently distributed via global distribution systems (GDS) and most carriers utilize one of three major GDSs. Should PAX count need to be pulled directly from airlines, it was shared that this could be the avenue through which it was transferred.

"Most of the carriers operated on one of like three different GDS's. I mean, there might be some smaller ones out there in addition to that. So, there's only going to be.. Most of those three GDS have very similar structure. So, I'm assuming that you can get it to work. But you'll need to talk to each of them." (Domestic Airline)

- **5.3.3: PAX Data Given to DOT Daily but Reported Monthly:** The DOT shared that PAX counts are recorded for each flight to calculate passenger facility charges. However, total PAX data from DOT is only reported on a monthly basis.

"No, they actually give us the PAX counts because, again what we do is we collect passenger facility charges from the federal government based on those counts. We track that. So, as the HTA tracks that, DBEDT tracks it in terms of the total number of arrivals, we use that number very carefully. So, it is something that the airlines do provide to us on a daily basis. And of course, we calculate it every single month." (Department of Transportation)

- 5.3.3.1: Given that this data is already being shared by the airlines, it was mentioned that the solution to receiving daily PAX data may be to coordinate with the DOT.

"So, I guess the question I would have back to you in this effort, because we are already coordinating with the Department of Transportation on the flights themselves, is there one department that has the information that may not be talking to another, right? So, I would be curious about that versus looking to the airlines to then report." (Domestic Airline)

5.4: DATA STRUCTURE

- **5.4.1: Data Structure Needs to Remain Intact:** In implementing a digital form, it was shared that any adjustments to the data structure such as renaming fields will have a trickling effect to those utilizing the dataset. In particular, this would require these organizations to update syntax that they currently use to analyze the data.

"I don't think there should be any change with regards to the fields, the names of the fields, and just there should be no change. Because otherwise, when we change or when the digitized forms change, then I would have to change syntax and everything. And DBEDT will also have to change all their systems, however they are reading the files that we are giving them. They will also have to change. So, all the field names should be the same. The type of format, the formats, the type of fields, if they are numeric, they should also still be numeric and everything. So, I don't think that the data structure should change." (State Research Vendor)

- **5.4.2: Provide Unique Identifiers for Incoming Animals:** It was suggested that unique identifiers could be generated for passengers bringing animals to the state which would make it immediately clear which animals should and should not be arriving.

"For us, having the accurate information of the animal and identification. I mean, even if it's something that we provided, for example, when they qualify with us, we're able to generate for them some kind of code or something on that they could use on the Ag deck, for example a number or something. That would be great too because that would be a unique identifier in addition to that to use." (Department of Agriculture)

6: INFRASTRUCTURE

6.1: IN-FLIGHT WI-FI

- **6.1.1: Not All Carriers Offer In-Flight Wi-Fi:** Wi-Fi offerings among airlines vary with some carriers having their entire fleet enabled with free Wi-Fi and some with Wi-Fi on select flights. While airlines are moving towards in-flight connectivity on all flights, it is still a least a couple years away for some carriers.

"To the best of my knowledge they are, because they're all mainline, no, I think right now we're at 321. Or they're wide body, triple seven or 787 flights and as far as I know, they all have Wi-Fi." (Domestic Airline)

"I'd have to get back to you on that because Hawai'i lives in this kind of nether region where it's sometimes treated as international and sometimes treated as domestic. I think that most of the aircraft that we fly to Hawai'i are international configuration. We will have 100% of the fleet covered by I believe the middle of 2024. I think we're at 80% of the fleet now. But that is, the domestic is completely covered. Contiguous lower 48. International [will] be the last and I'm not quite sure where in between Hawai'i falls." (Domestic Airline)

- 6.1.1.1: It was mentioned that while some airlines offer in-flight Wi-Fi, it may be paywalled which will affect access to those not wanting to pay for connectivity.

"It's certainly moving in that direction. And we have plans to do that over the next couple of years, but right now we have none. And other airlines have made different choices. They've chosen to charge for connectivity. So obviously, in an environment where you're charging people for access to the internet, you can't expect everyone to do that just for the purposes of filling out a form." (Domestic Airline)

- **6.1.2: In-Flight Wi-Fi Can Only Handle So Many Users on Some Airlines:** Certain airlines expressed concerns about having every passenger on the plane simultaneously connecting to the Wi-Fi network to complete the In-flight Form due to limited bandwidth; it was mentioned that this is sometimes the rationale for implementing a paywall for onboard Wi-Fi.

"Our plan is to offer free Wi-Fi. But that's because we're putting in a new generation of system that has enough bandwidth to support that. The bigger issue with, the reason airlines charge for connectivity now, is not the economic returns, it's to reduce the number of people using the system at any given time because if they all did, the system would bog down. So again, even on a flight with current generation connectivity, you can imagine someone making the in-flight announcement that everyone should do their In-flight Forms and the system immediately crashing when everyone goes to the internet at the same time." (Domestic Airline)

- 6.1.2.1: Other airlines shared that they are upgrading their current Wi-Fi networks to handle more network-intensive activities such as streaming, meaning that simultaneous access to complete the In-flight Form would have no effect on their network.

"No, we are actually going through upgrading our Wi-Fi right now. We've done over half our fleet and it's now to, it's going to allow you to stream Netflix and Hulu and those sites that require a lot of bandwidth. And we did a lot of testing last year surrounding you know, if we get 100 people connected at one time, what does it do? And the system performed fantastically. So, all of our aircraft are upgraded by later this year. And so, we don't see that as a risk." (Domestic Airline)

- **6.1.3: Contingency Plans Needed Due to Unreliable Connection:** Even though more airlines are offering in-flight Wi-Fi, there are still inconsistencies in uptime. For this reason, it was suggested that a contingency plan would be needed if the form is completed in-flight such as having paper forms available at the airport.

"If we say we're getting rid of the paper form, I wouldn't want to keep backups of the form on the plane should that happen. I'd rather it to be a contingency plan by the state in the airport once that aircraft arrives. And I would not want it to include keeping them on the plane to hand out the form and complete it. And that, because we still need to turn that plane for another flight, it would have to be something that happens outside of the aircraft." (Domestic Airline)

"[MODERATOR: [NAME], are [DOMESTIC AIRLINE] flights to Hawai'i Wi-Fi enabled?] Yes. [MODERATOR: 100%?] Yes. Now, it's another it's another question, [NAME], whether or not that Wi-Fi is actually working on board. Because they do, even though our aircraft may be equipped with it, there are issues that that come about, so it wouldn't be fair to say that every aircraft is 100% connected, every, at all times." (Domestic Airline)

- **6.1.4: Whitelisting Needed to Allow Passenger to Access a Web-Based Form:** With in-flight entertainment only offering select websites for passengers to use or in-flight Wi-Fi only offering the carrier's website for free due to pay walling, several airline stakeholders shared that they would need to whitelist any website used to complete the agricultural declaration form and tourism survey. Some shared that this comes with an associated cost to the airline.

"What we would need to do is whitelist whatever the page is and program that into our portal which does have a cost to it, right? Because we are working with two different vendors, and to give free access to a site costs us some money, because they're not making money by charging for the Wi-Fi and things like that in order to access. So, there are some work, there's some coding, there's a small cost associated with it. But that is where I see our best opportunity, is in the mobile app on .com and then within our entire in-flight entertainment portal." (Domestic Airline)

"But whitelist the form URL (Universal Resource Locator) so that it can be filled out online onboard. So, we have, of course, our satellite Wi-Fi. It's \$8 if you want to purchase the satellite Wi-Fi onboard where we can whitelist several URLs to say this URL is free. And so, I believe that we have the ability to do that. Or we might have the ability to do that with this particular URL. So that makes it easy for folks, right?" (Domestic Airline)

6.2: AIRPORT WI-FI

- **6.2.1: Collect Data In-Flight and Sync with Database at the Airport:** With in-flight connectivity not being consistent across airlines, it was suggested that form data can be collected through handheld devices during the flight and uploaded to a database upon landing in Hawai'i and connecting to airport Wi-Fi.

"In-flight, I don't know if it's a cost factor, technology, but maybe then there is a, they have a set of tablets where somehow before takeoff, there would be some type of marker or a way for this, a system to let the crew know that there's like 24 passengers that actually didn't fill out a form yet. And it's an opportunity for them to do it via the tablet. And maybe when they touchdown in Honolulu, when they get within range, somehow there's [an] ability to sync up and upload the information that way." (Office of Enterprise Technology Services)

- **6.2.2: Airport Wi-Fi Infrastructure Not Adequate for Safe Travels:** Having to utilize airport Wi-Fi for the Safe Travels program, it was mentioned that the airport Wi-Fi infrastructure was not strong enough to support a seamless data entry experience, causing people to become frustrated with the process.

"We did do a pilot for the Safe Travels before ETS took it over and the Wi-Fi at the airports were not good enough. There was, it was super, super laggy. [MODERATOR: Even to fill out a form?] Yeah, it was taking people forever and they got really upset." (Hawai'i Tourism Authority)

6.3: ONBOARD DEVICES

- **6.3.1: Airline-Provided Devices Not Consistently Offered:** While some airlines offer entertainment systems or mobile devices to passengers, several mentioned that they only carry devices for their staff to use or do not have any form of in-flight entertainment system implemented.

"I mean, our flight attendants are enabled with devices, but we would never hand them to our guests to complete a form." (Domestic Airline)

"We do not have an IFE (in-flight entertainment) system as in like a seatback TV. And in order to access our Wi-Fi and entertainment portal, you have to have a personal device. Our entire strategy around that is personal device, we would if we were to think about, like our check-in kiosk and that, that requires a vast amount of programming. And I would probably need a two-year lead time in order to get that prioritized with all the other work that we have going on and getting ready for CUSS 2.0 (Common Use Self Service), which is the industry standardization across kiosk applications that airlines

are marching towards. So, the personal device would be the only way in-flight if we weren't going to have a physical form for them." (Domestic Airline)

6.4: KIOSKS

- **6.4.1: Kiosks Would Imply Extra Infrastructure Demands:** One solution to collecting the In-flight Form information digitally would be to utilize kiosks. However, these would impose a large burden on the organization tasked with managing them.

"If we move to digital products, then someone would need a kiosk to get it pre-boarding, for example. And that's a lot more infrastructure and logistics to account for versus handing out stacks of paper and pens. [...] As far as creating the infrastructure, I don't see a problem there. It's just having that goal, the strategy and move towards it. It's just making sure we're not tripping over ourselves and imposing things on the airlines that would be problematic. [...] If I were wearing the airline hat, I would hate kiosks because that's more infrastructure that they have to maintain." (Office of Enterprise Technology Services)

6.5: DEEP LINKS/PRE-POPULATING

- **6.5.1: Pre-Populating Form Fields May Increase Adoption:** Some shared that having a form that has pre-populated information would be easier for passengers and likely lead to higher compliance rates.

"If we think digitally, folks are more likely to just complete the information and especially if you have some kind of a login system where it auto populates their information. So now it's even a faster process. So you aren't having to type in Mickey Mouse came to Hawai'i today, right? You might even get a higher compliance." (Domestic Airline)

"You could streamline the process for residents by filling in data. Well, it's a little scary, but if you already have their data populated with your home address and all that, right? Now you got to fill out the whole Ag side that says what's your home address? What's your, where will you be staying and that's two times you're at the same address. I could just mark the box that says I'm a returning resident. I don't have to state. Boom, I'm done." (State Research Vendor)

- **6.5.2: Deep Links Can Be Used to Pre-Populate Form Data:** When discussing how a digital form could make the experience better for passengers, some airline stakeholders shared that they can potentially utilize deep links to pre-populate data on the In-flight Form such as flight number or passenger information.

" I also think that we could, together with [NAME], look at things like deep linking in saving the customer the, to put in their first name, last name, flight number, things like that if you have destination fields that we can prepopulate. That's a way to make it more convenient without kind of tying ourselves together in a way that's going to be difficult to manage." (Domestic Airline)

"It would all depend on how your site is developed. We do this quite frequently for offers and for sales information and things like that on [DOMESTIC AIRLINE]. So for instance, we'll send you an email that says flights from \$59. And when you click that email, we pass through a series of information to [DOMESTIC AIRLINE] so that it understands where you live so that it pulls up to that from Seattle, \$59. We've also done similar things with, I have a partner promotion going on right now, where we send an email prior to your flight. And within that email is a voucher code that enables you to receive a free service from the partner. And that code, the partners website interpolates and then provides up the accurate promotional pricing or for that partner." (Domestic Airline)

- **6.5.3: Deep Linking Comes with Privacy Concerns:** While the technology is available to facilitate deep linking, some stakeholders shared that there would be privacy concerns depending on how the form is implemented. Others shared that their company is more conservative when sharing data so this may not be something that they would like to adopt.

"From a legal standpoint, I think both would be concerns. It is difficult. It would be integration work for us to transmit that data to pre-populate a form. And it would be, I think we'd have to look at our ability to take some of that information that's been provided to us for other purposes and furnish it to the State of Hawai'i. Data, the sort of data privacy and the integrity of the data that customers share with us, is incredibly important right now. And I think we would be very, there would need to be enormous restrictions or controls put in place to make sure that, for example, if we provided names and addresses the State of Hawai'i somehow through a system and it was a subsequent data breach, and the those became public through the state's system, there would be some serious issues for us to think through on that." (Domestic Airline)

- 6.5.3.1: It was mentioned that some sort of encryption would be needed if deep linking were to be implemented to protect passenger data from being intercepted.

"I think when it comes to needing to pass information, and certain combinations of information like your first, last, and your confirmation number, for example. [...] We would need some level of encryption and a handshake to make sure that we're not just passing these things in the open where anybody can intercept them." (Domestic Airline)

- 6.5.3.2: Others shared that the State would need to implement an API and a privacy agreement before they would consider deep linking.

"There would have to be an API and some privacy agreements in place. I think it's possible. We are exploring that in some other areas, but there with systems that already have access to our departure control system, so it makes it a little bit easier to do that." (Domestic Airline)

6.6: CONTACT SOURCES

- **6.6.1: Airlines Do Not Have Contact Information for Every Booking:** While contact information is gathered from customers that purchase their ticket directly through the airline's website, that

information is not always available from passengers who purchased their ticket through a travel agency.

"We have free travel communications that we send to every guest for whom we have an email. And so, it's important to note that that is only those guests who purchase directly through [DOMESTIC AIRLINE]. Typically, we won't be able to send free travel communications to guests who purchased through a travel agency." (Domestic Airline)

"As long as the travel agency puts in the customer's information, that will come over now. Because a lot of that information is shared between, it's in the reservation so we have access to it, right? And then we'll notify of about now sometimes agencies have a bad practice of putting their number in there versus the actual customer's number. [...] Technically, the agency is responsible at that point of notifying the customer. But we know that doesn't always happen." (Domestic Airline)

"Yeah, so it depends on which agency [it] comes through. My understanding is if it comes through some of the traditional online travel agencies like Expedia and Kayak, that information does get passed our way. But then there are other sources, like if you book through a real traditional travel agent like [TRAVEL AGENCY] or something. In some of those cases, depending on how that agency has connection with us, we will get that information." (Domestic Airline)

6.7: DATA STORAGE

- **6.7.1: Around 400,000 Records Received in March 2023:** In terms of the amount of records that would need to be stored in an online database, it was shared that 395,478 records were scanned by SMS Research during the month of March 2023.

"I would just like to mention again I was, while we are doing this discussion, I opened up the March file, the raw scanned file, without any processing. And just after merging, the total number of records is 395,478." (State Research Vendor)

6.8: ANALYTICAL SOFTWARE

- **6.8.1: Dataset Needs to Allow for Easy Analysis Within Statistical Package for the Social Sciences (SPSS) and Microsoft Excel:** The majority of stakeholders involved in the analysis of the data coming from the In-flight Form shared that they commonly work with IBM SPSS and Microsoft Excel for their reporting. When digitizing the In-flight Form, it will be important that the dataset can be easily exported to a format recognizable by these software programs.

"We join all the background data from research vendors for the domestic In-Flight survey and the departure expenditure survey from the data that they collect from the other form, we have to join that. And then we provide them with a single SPSS data file, which combines all of our VSAT data. We also

provide a PowerPoint report, as well as SPSS banner tables, in SPSS format, and also converted into Excel which the client prefers..” (State Research Vendor)

“Well, ideally, we would want SPSS. And my question too is how easily can we get the data? How can we access it? That’s my main concern about the data. Yeah, so if they ever have to digitize it, how easily can we access the data? And how can we, you know, can we export it in SPSS? Can we export it in Excel?” (State Research Vendor)

“We asked all the contractors to use SPSS. That’s why our major contractors conducting the VSAT survey, domestic In-flight survey and departure and expenditure survey all use SPSS. And we actually, us old people, our statisticians, economists, they use SPSS as well. But we do have other programs. I think our people are pretty efficient, proficient in STATA and some of them use SAS, but a majority will be SPSS.” (DBEDT Research Division)

7: OPERATIONS

7.1: MANAGEMENT

- **7.1.1: Airlines Expect the State to Manage:** Being a new process that the State hopes to introduce, many airline stakeholders shared that they would expect the State of Hawai'i to take the lead in managing the new systems brought out through digitization without much active intervention on their part. Some shared how this is the case for other similar systems such as gathering contact information for the Center for Disease Control (CDC).

"I think our expectation is that the state would manage all of it. [...] If the state is to introduce a new process, I think it should be one that works without a lot of active intervention by airlines." (Domestic Airline)

"The closest facsimile that I can think of is the CDC contact information that we collect today for people reentering the country. And then the ETIAS (European Travel Information and Authorization System) process for entering Europe, they are requiring an electronic visa. I think in the U.S. has the same for the reverse. If you're coming back and you're a non-U.S. citizen, those would probably be the closest facsimile that I can think of. And both of those, again, are managed by the regulator and not by the airline." (Domestic Airline)

- **7.1.2: Airlines Should Be Educators, Promoters, and Process Improvers:** With airlines not wanting to manage the new processes brought about by digitization, some stakeholders shared that they should take the lead on educating passengers on any new systems that are implemented, promoting the digital form through notifications, and helping improve the process by providing feedback as the digital form is rolled out.

"I think that our role as a carrier would be to promote it. I think we would put links out in places that are highly visible and customers will discover them in the time of need. And therefore, that's where the convenience will come from." (Domestic Airline)

"I think [airlines] should play a role in teaching people how to get on if it's an app. I think they should educate themselves however you rollout that digitization forms. But then too, also input it before the rollout and what they would consider or what they would want to see or not want to see on there." (State Senator)

- 7.1.2.1: Along with the airlines, it was mentioned that state tourism departments such as HTA and the Hawai'i Visitors and Convention Bureau (HVCB) should be involved in educating visitors on the importance of completing the form.

"I think we can use HTA. HTA usually is, and the big thing when I saw it for myself with HTA has always been educate, educate, educate. They already do marketing with HVCB. HVCB should also be a partner with that. Even the business communities could also play a role because they have good ideas too. HTA should be the one with the message." (State Senator)

- **7.1.3: The HDOA Needs to Refine the Survey and Improve Enforcement:** It was mentioned that the HDOA should take advantage of the digitization process by re-evaluating the questions on the agricultural declaration form and considering how it can be improved to better protect the state from harmful pests.

"I think this the Department of Agriculture has to do a much better job in policing what in the world passengers are bringing in here. Because they're not, I mean, the Ag form is not bulletproof. It's actually a sponge. It's got like so many pukas in it. [...] Their questions are so lame on that on that form. And I know that they're one of the ones that are resistant. I've talked many times with [NAME], the [POSITION AT HDOA], and [they're] not fully embracing this idea." (State Senator)

7.2: TRAINING

- **7.2.1: Airlines Will Need to Provide Extensive Staff Training:** Regardless of the format that the digital form takes, airlines shared that they will likely need to provide their staff with training on the new process; this is everything from training flight attendants on new announcements and ground crew on promotion efforts such as signage. Some airline stakeholders expressed that this training will be difficult and extensive due to their current processes.

"The biggest thing is making sure that airport agents in the points of departure to Hawai'i are well versed in what the process is, and what the options are, and probably have either a counter sign or standing sign something to promote the option. Learning from the COVID experience, when folks are waiting in the gate house or waiting for departure or something, that's a good time to engage with the form. I would also say that flight attendants on those markets also need to be well versed in what the process is and how to access it. And then also what the experience is going to be like on the ground." (Domestic Airline)

"Our flight attendants work to sort of memorize everything that they need to say throughout the process of a flight. All of those safety requirements and informational tidbits. And so, anytime we make a substantial change like this, it's just getting, it's a whole new training piece for them. So, a scenario in which you're consistently altering the process to try and make it better can become stressful and cumbersome for the folks who are implementing it." (Domestic Airline)

- 7.2.1.1: On top of the training needed, some airline stakeholders shared that this change in training will require the airline to update flight manuals, scripts, and other training materials.

"The in-flight manuals and announcements, scripts would have to change, as well as a, our audit documents would have to change for when we do internal audit on the flights to Hawai'i." (Domestic Airline)

7.3: EDUCATION & MESSAGING

- **7.3.1: Need Education on What is Not Allowed Prior to Flight:** With the agricultural declaration form attempting to stop travelers from "bringing harmful pests to the State of Hawai'i," some expressed that passengers need to be educated on what is not allowed before getting on the plane.

"I just think from the Ag standpoint, the key is to educate the passenger before they get on the plane. Telling them what not to bring on the plane should be done before they get on it, not while they're on. They're like, 'How am I gonna get rid of the something on a plane? I can't just open the window and toss it out.' Right?" (State Senator)

- **7.3.2: Education on the Purpose of the Form Will Bolster Compliance:** While the current form gives the rationale for why it needs to be completed, some stakeholders shared that putting more effort into communicating why the form is important to preserve the State of Hawai'i's natural resources will encourage more people to complete it and provide accurate information.

"There would need to be some kind of a really impactful communications effort to make sure or to ensure compliance and ensure response. They need to understand the importance of the Ag form which I think it's the idea that Hawai'i is always trying to maintain a safe environment. So, protect our plants and our everything else here. So that campaign needs to be enforced." (State Research Vendor)

"One of the things that is unfortunate about the way that it's done today is that there's very little education given to visitors on why you're filling out the form. And I think if you think about other places like Australia and New Zealand that have pretty strong biosecurity regimes, there's a lot of work done to make you aware of why it's a problem for you to be transporting agricultural products from place to place. And we don't really do that." (Domestic Airline)

- 7.3.2.1: It was suggested that an educational campaign on the importance of the agricultural declaration form and tourism survey could be directly tied to the HTA's Mālama Hawai'i messaging.

"I think the Mālama Hawai'i messaging that the Hawai'i Tourism Authority is currently pushing aligns really well with this idea of recognizing the uniqueness of the place and giving back to Hawai'i by sharing this information so that Hawai'i can better understand its visitors and make sure that we're doing everything we can to balance the needs of the destination with the needs of the residents who live here." (State Research Vendor)

"If you tag it into part of the Mālama Hawai'i promotion, then by taking care of the place that you're visiting, by understanding our culture, and we would like to better understand who's coming in or who we're hosting. And the way you can best help us best serve you is by filling out the flip side of the mandatory [agricultural declaration] form. But I think there's a way to market the message to get more without saying, you have to and when you have to." (State Senator)

- 7.3.2.2: Other stakeholders felt that an educational effort could tie in nicely with destination management by including a sustainability pledge similar to the Palau Pledge.

"Has anybody asked about the sustainability pledge or the possibility of adding the sustainability pledge to, you mentioned the two elements, the HDOA form and that optional [tourism survey] form? Could there be a third optional section where they take the, I think it's called the pledge for our keiki?" (State Representative)

"You could put on, like the Palau pledge, where everyone going to Palau has to sign the thing that I pledged to behave and be responsible traveler during my visit, for the children of Palau. So, you could take it, that would also help with the destination management. And then you could feed them the, the in-flight survey, and they'll already be in this kind of, I'm a responsible traveler kind of mindset." (State Research Vendor)

- **7.3.3: Use a Similar Approach to Mālama Hawai'i:** To deliver messaging surrounding the importance of the agricultural declaration form and changes from digitization, it was mentioned that it should follow a similar promotion scheme to the Mālama Hawai'i program.

"I mean, to push out some of the messages with regards to like, Mālama taking care of this place, right? I think they've been using social media with that. They've been using targeted social media too, right? So I think that might be a way to do it as well. Where folks that are in the airport environment, or something like that, for them to be able to target that so that it supports the message that we, then would give them at the airports prior to boarding all that kind of stuff." (Domestic Airline)

- **7.3.4: Utilize Airport Signage:** Some airline stakeholders mentioned that announcements and signage at departure gates could be utilized for messaging surrounding the form.

"We have the ability to use announcements and signage at the gate to communicate with them before they get on board." (Domestic Airline)

- **7.3.5: Focus on the Call-to-Action, Not the Penalty:** With the current agricultural declaration form focusing more on the penalty involved for not completing the form and bringing pests into the state, it was shared that messaging surrounding the call-to-action of protecting Hawai'i may be more effective in increasing participation.

"The form actually has a statement already on it. It says, 'Aloha and welcome to Hawai'i. Many plants and animals from elsewhere in the world can be harmful to our unique environment, agriculture and commodities. Please help protect Hawai'i by not bringing harmful pests into our state.' So, I mean, it's a little vanilla. But there is something already on the form. Yeah, there's a lot more real estate given to the penalty than there is to the call to action." (Department of Agriculture)

- **7.3.6: It is a Behavior Shift that Will Take Time:** Having learned from Safe Travels, it was mentioned a behavior shift will need to occur before passengers fully adopt a new process for the In-flight Form. For this reason, education and messaging will need to be a continued process that evolves and focuses on sharing the importance of the form.

"But I think once you sort of put a system in place and people know that's the game, then they do it, right? It's a behavior shift, right? So, I think if all of us in this process, as we digitize it if we're all solid on the messaging and making sure that people know that it's state law to do so." (Domestic Airline)

7.4: COMPLIANCE & ENFORCEMENT

- **7.4.1: Compliance is Natural with a Physical Form:** Being presented as a physical form during the flight, some stakeholders suggested that compliance is naturally enforced with passengers knowing that the flight attendant will return to collect their form.

"Compliance as it is today, I get that. As the flight attendants is coming down and passing out the forms and then collecting it and whatnot, there's some level of like, 'Okay, oh, shoot, I should fill this out.'" (Domestic Airline)

- **7.4.2: Airlines Worried About Forced Compliance:** With the current process, airlines are required to distribute the In-flight Forms to passengers, collect them, and then hand them over upon arrival. As this does not require airlines to enforce compliance, many shared that they do not want to be the ones to police compliance.

"Well today we have some level of involvement in the fact that we pass the forms out and collect them and turn them in. Beyond that, I would hope you would not make it more complex or more intense than that. Again, we should not be police. We should not be trying to enforce the requirements of the Hawai'i tourism board or Hawai'i agriculture or whatever the case may be." (Domestic Airline)

- 7.4.2.1: Should the form be digitized, some airlines suggested that enforcing 100% compliance would be difficult as they do not have the contact information needed to reach all of their passengers.

"We will try our best to get in touch with everyone who's arriving but we would never make a promise to absolutely reach every single customer. Just because usually, there are some that we don't have contact information for or no matter how often or how loud we say that, they ignore it." (Domestic Airline)

- **7.4.3: Enforcement Upon Arrival Would Be Difficult:** It was mentioned that attempting to enforce compliance upon arrivals would be difficult as there would need to be enough staff to manually check forms as passengers disembark their flight. Alongside this, it is not entirely clear who would be responsible for this enforcement.

"The second challenge is going to be, as indicated, when they get off the plane, how is HDOA going to know who has an animal [or] who doesn't have an animal and all this other kinds of stuff? They're going to have to actually position somebody to go and review every form of that flight coming in before that flight arrives. So how would they do that?" (Department of Transportation)

- 7.4.3.1: Enforcing compliance upon arrival may pose an extra challenge at Neighbor Island airports where staffing and resources are already limited.

"The Neighbor Islands don't have the workforce that we have in Honolulu. The number of passengers just traveling through Honolulu is much greater. So, you do have a lot more staff. Secondly, the Neighbor Islands basically, when it comes to exiting the airport, there are different ways that people can get it, and they're kind of spread out. Honolulu basically the baggage claim is all located downstairs in the basement. So it would be a little bit more challenging there." (Department of Transportation)

- **7.4.4: Document Checking Technically Feasible:** With documentation being required for some international flights, airlines shared that they have the technical capability to implement this sort of system. However, the main issue would revolve around the legality of doing so as Hawai'i is not an international destination.

"When you enter the U.S. now from a foreign country, you have to enter, for the CDC, some contact information. And right now, we've built that into our app to make sure that you've done that. And the same thing or similar was applying during the COVID when there were restrictions on vaccination requirements and testing where we use, in that case, we used a third party called VeriFLY, to check that you had all the necessary paperwork completed. And then VeriFLY would send a confirmation to us. And then once you had that confirmation, we would allow you to check-in. So there is precedent for this sort of requirement of a document check, but it's a very high standard." (Domestic Airline)

- 7.4.4.1: A possible avenue for checking compliance would be a QR code that is generated upon form completion and scannable for the enforcing agency.

"..and then this is the boarding group you're in and make your arrival in South Korea more convenient by filling out this form. And then clicking that would slide our app out of the way, launch a browser instance on the front end of the Korean manage website, and then fill out your information and you wind up with a QR code that scannable on arrival by the Korean authorities. And yeah, that works." (Domestic Airline)

- **7.4.5: Completed Form Required to Receive Boarding Pass:** Some stakeholders suggested that passengers should not be able to receive their boarding pass until they complete the form. However, this method raises questions of the reception that airlines would have towards this process.

"The easiest thing for us would be if the airlines on their, when they're ticketing passengers, when people are checking online, if a passenger couldn't print out their boarding passes unless they filled out this form. Well, easy for us. Not easy for the airlines." (Department of Transportation)

"And I don't see why, if you don't fill it out, why the airlines cannot preclude you from getting your boarding pass. I know that's some level of resistance. But to me, it should be where I fill all that stuff out. And if I choose not to fill it out, I don't get my boarding pass. And if it's because I don't have a phone and I'm just stuck in the 1900s, I can go to the kiosk and I can fill it out at the kiosk and then get my boarding pass." (State Senator)

- **7.4.6: Vehicle for Visitor Fee:** While the Green Fee did not pass during the 2023 legislative session, it was mentioned that a similar visitor fee may open an avenue to enforce compliance down the road. By having a system requiring a fee to be collected before landing, the agricultural declaration form and tourism survey could be integrated to ensure all arriving passengers are compliant.

"We've had a great challenge in implementing Governor Green's Green Fee because you can't do it via ticket because of the anti-head tax, the federal. If we can do this and then we can attach that Green Fee to the application, basically, that will be great. And then charge whatever the charges to that. That way, we know we're catching every single passenger, number one. Number two, we don't have to really worry about the anti-head tax that the airlines are dealing with." (Department of Transportation)

- **7.4.7: Reconciliation Should Be Possible with Airport Data:** Considering the option to reconcile passenger counts with the amount of form completions, airline stakeholders mentioned that this data should be available from the DOT. However, concerns were raised about how quickly this data can be reconciled and if airlines would be willing to restrict passengers from disembarking the plane.

"I think this goes back to again, international versus domestic travel, right? And what current requirements are and not wanting to impact that. But there is data that the airports have around like passenger facility charge collection and those kinds of things. There are other ways to sort of back into participation numbers. [...] And I think the team has done a good job of basically saying like, we would work to facilitate a high level of participation, but we're not going to stop the movement of passengers due to lack of participation in the form." (Domestic Airline)

"I think that would be somewhere on your end where most of our flights are full. And correct me if I'm wrong, as part of the form you fill out how many people are in your party. And so, I think that creating that data then on that end is probably the best, because I imagine we're not going to get a direct feed immediately after that form is filled out. And so that would make it difficult for us to verify that on our end. But you know, assuming all of our aircraft that fly to Hawai'i are always 175 seats and generally they're pretty full. " (Domestic Airline)

7.6: INCENTIVES

- **7.6.1: Incentives for Completion May Increase Adoption:** Considering methods to ensure compliance, some stakeholders shared that incentives may encourage more passengers to complete the form.

"Anytime you offer them something that is truly a benefit, if it's just something that we're gonna give you 5% off in the airport store [or] something, do I think that moves the needle? No. But if it's something of value that a customer, that the majority of customers would find a great addition to their trip, or something that they can learn more about whatever. I think there is value to it." (Domestic Airline)

"Absolutely. Some kind of like, we could probably get businesses to offer like 5% off or 10% off. Or we could even like if we wanted to, we could do like a 1% off your TAT on your hotel or something? That'd be kind of complicated. But yeah, absolutely, I would support incentives." (State Representative)

- 7.6.1.1: It was suggested that the incentive could be a gamified experience where a random winner from those who completed the forms is drawn and receives a prize.

"That's something that airlines could do. Even from the government standpoint, all I care is for as much adoption as possible. If I want to gamify as airline, if I was in charge of an airline, I totally gamify. You know how they do that? Oh, okay. We're going guess the halfway point of our trip from whatever to whatever, right? And you get a box of chocolate or something like that. So, you say, okay, everyone is filled this thing out on the plane, we're going to pull the seat 25 A, you're the lucky winner. You get like Jack Daniels, right now." (State Senator)

- 7.6.1.2: Should a desirable incentive be implemented, it was mentioned that it would almost be a penalty to not fill out the form and receive the incentive that is offered.

"I think that there should be again, the carrot and the stick. If you do find ways to use the form that provides benefits, tangible benefits, that they can get for using the form, then that's kind of a negative if they don't use a form that they can't get those." (Department of Agriculture)

- 7.6.1.3: Some stakeholders shared that while incentives may increase participation, there is also the chance that it will not work depending on when passengers are being asked to complete the form and how long it will take to complete.

"That's a tough one because whenever, even on the departure of survey, right, or arrival, you're asking people to participate in their leisure time. And their leisure time is important to them. So, on a plane coming here, it's a little different. But I think on a departure, even on the departure, I think it's a little difficult to get them involved in a lengthy survey without offering them something in return. That's just our experience." (State Research Vendor)

- **7.6.2: Convenience is an Incentive:** While some stakeholders suggested discounts as an incentive, others shared that convenience itself can be a huge incentive for travelers. Should completing the digital form make their check-in or arrival experience quicker and more seamless, it is likely that the form will see a high level of compliance.

"Another thing you might want to think about, and we've looked at doing this in the past too, is there some sort of incentive or what's in it for me as the customer to make me want to do this? So, is that maybe a better experience? Once you get in, you have maybe a fast lane for customers that do this at the airport. Kind of thinking of that like TSA precheck where you reward them a little bit for that behavior. And then that kind of turns into like, 'Oh, how do I get in that line?'" (Domestic Airline)

"I also think that it is the arrival experience, or the differentiated experience, that makes it easier for us to promote it. So, I think that having a separate lane making sure that the entrance to the lane is brought far enough forward that the customer feels the benefit of being prepared, makes it easier, especially for our own marketing, but then also media exposure, things like that. If you on arrival don't really have a significant differentiated experience, then why not just wait until the last minute to fill it out? That the type of thing that I think we run into. Case in point, I went to Canada over the weekend, we promote ArriveCAN as a way to expedite the line. But the reality on the ground is that you're in a blended line with people who have and have not arrived prepared. And I think that's a drag. The ones who do take the initiative, are well informed, expect a return on the time investment that they make before they arrive." (Domestic Airline)

- **7.6.3: Incentives Might Reduce the Need for Mandates:** It was mentioned that should an incentive ensure a certain level of adoption, the State of Hawai'i may not need to consider mandates on airlines to enforce compliance.

"I like the idea of digitization, however, I'm concerned about the mandate of it because there's always going to be resistance of some sort. So, if there is a maturity model wher we start making an offer and encourage the convenience of it, folks can take it on over time [...] unless there are other incentives to do so." (Office of Enterprise Technology Services)

8: POLICY & PROCEDURE

8.1: CURRENT POLICY

- **8.1.1: Need to Re-Write HRS Chapter 150A:** The current law enforcing the completion of the agricultural declaration form is Chapter 150A of the Hawai'i Revised Statutes (HSR). In order to transition to a digital form, this law would need to be updated to consider the new format.

"We would have to rewrite the CFR... not CFR, but the HSR 150A to say that it's no longer going to be paper forms. It's no longer going to be collected by the flight attendants. It's gonna be, now becomes the airline's responsibility." (Department of Transportation)

- **8.1.2: Impact on 201B-7.8 (Tourism Statistics):** As part of the tourism-related activities statute, tourism information on visitor arrivals, visitor characteristics, expenditures and a range of other data points need to be gathered and reported on. Should the In-flight Form move to a digital format and the tourism survey be forced to become an intercept survey, the amount of resources needed to continue gathering this information would increase greatly.

"So, just imagine if we had to do the domestic survey that way. That would be an army of people that we would need and I don't know how we do that. But if you want the statute, it's 201B 7.8 for Tourism Research." (DBEDT Research Division)

- **8.1.3: The Hawai'i Green Fee:** While not an active piece of legislation, the Hawai'i Green Fee was mentioned as a possible avenue to distribute the form if the law were to pass. Depending on if a similar piece of legislation passes in the future and the platform through which it is collected, the agricultural declaration form and tourism survey could be added on to put all entry requirements in one place.

"So, the current legislative session did not pass the visitor fee. But if a visitor fee ever becomes the law, then that kind of solves all of this because in order to implement that, you would have to have an online system. [MODERATOR: Why do you say that [NAME]?] Because you would have to have an online system for infrastructure. I mean, I think anything else would be much more expensive. So, if visitors had to pay a fee, as was suggested by multiple bill proposals this legislative session and before that, the cheapest, the most efficient, the best way to collect that would be an online application and an app. [...] And then you have to show that you've paid it so that, so they're showing some kind of a QR code or something on entry that you've paid, the fee would become a requirement. And as part of that, you would collect the data as well." (Office of Enterprise Technology Services)

- 8.1.3.1: Should the digitized form be attached to a visitor fee, it was mentioned that a digitized process after dismemberment may not be preferable as FAA regulations dictate that fees collected at the airport must be spent within a certain radius of the airport.

"The Federal law says that any fees collected at the airport need to be spent within a one- or two-mile radius of the airport. So, if this is perceived in any way being collected at the airport, then as long as we want to make nice entry roads and have the train station at the Honolulu airport or better rental car facilities, great. But you're not going to improve trails and beaches and restrooms and stuff like that out there. Because, like they talk about Fiji I think a lot on the Green App or Green Fee, that's a nation. So, they can charge anything they want at their airport. We're under FAA, and the FAA tells you what we can and cannot do." (State Senator)

8.2: POTENTIAL POLICY CONCERNS

- **8.2.1: Inhibiting Inter-State Travel:** Some airline stakeholders were concerned about enforcing 100% compliance as they cannot prohibit someone from boarding the plane due to not filling out the agricultural declaration form.

"So now obviously, to [NAME]'s point where we're inhibiting boarding or preventing people from moving within the United States. And usually those are places that we go if absolute compliance is a requirement. I think that gate agents would rightfully be like, I can't keep anyone from getting off this plane if they bought a ticket. That's where we're going to have to accept some amount of people who just don't get on board." (Domestic Airline)

- **8.2.2: Check-In Is Federally Regulated:** The current check-in process for airlines is regulated by the federal government which may prevent any digital forms from being added to the process.

"This is where we start to blur the lines between the form and what is a federally regulated process, right? That check-in process is a federally regulated process and not a place that has, states have historically been able to impact. I think that would, from a precedential perspective, create a lot of concern." (Domestic Airline)

- **8.2.3: State-Specific Consumer Privacy Laws:** In regard to transferring data from airlines to the State for use cases such as pre-populating form fields, it was shared that there will likely be some difficulty navigating consumer privacy laws; this will become especially difficult when considering the different laws in place across every state.

"There would have to be some legal privacy discussions around that in order to get access to the information to transfer that. And potentially, depending on the state that folks are coming from, an opt in. Because as you know, California and Colorado now have some of the strictest consumer privacy laws. And so, we have to make sure that we are fitting those." (Domestic Airline)

"If we're collecting benign data, that's one thing. But it's opened the door to gather more. Because the current form right now is asking for your destination address. If you're a resident, your destination address is your home. So, folks can be sensitive to that type of information. And also, there's the, your full name, email address, phone number, for example, that type of information as well. So though that information is not protected by Hawai'i statutes, Europeans are sensitive, they have laws that have to

protect that information in several states. Now, most notably California and New York have provisions protect similar types of information as well." (Office of Enterprise Technology Services)

- **8.2.4: Cannot Share Passenger Emails:** An airline stakeholder mentioned that it is likely not possible for them to share email lists with the State of Hawai'i due to data privacy restrictions within the company.

"I think if it's a question of adding a link or content to one of our existing communications to guests, that is something I think that we can do within reason. I don't think we could, for example, provide our email list to the State of Hawai'i because I think that would be a violation of data privacy restrictions that we have." (Domestic Airline)

"No, that [is] one of these classic situations where I know that carriers have their data, right? But they don't share their data, right? That would be an antitrust violation, that would be collusion. And they certainly don't share it with the public at large." (Economist)

- **8.2.5: Difficult to Pass Laws Around Airlines:** Trying to require the in-flight video specific for Hawai'i-bound flights, it was mentioned that it is very difficult to pass legislation that requires airlines to take destination-specific action.

"It has been extremely difficult to pass any kind of legislation requiring airlines to do anything which is, I think, a big part of the reason why we haven't made it this far on digitizing the form yet. We've been trying for years to just get them to do an in-flight video saying, don't walk on a reef, don't use harmful sunscreen, protect the environment and the culture when you're here. The legislature has been unwilling to pass anything like that." (State Representative)

"I mean, if the Ag thinks we can pass legal muster, I know we can certainly beef it up. But we can't tell.. So, I've been asking for years, show the video saying don't go on unmarked trails or whatever. We can't force the airlines to do it. We're not the FAA. We can't force them. So, I don't know. Maybe there needs to be federal level legislation with a clause to enable states to require, actually that's probably what somebody should do." (State Representative)

8.3: POTENTIAL POLICY CHANGES

- **8.3.1: Some Willing to Consider Mandatory Tourism Survey:** Some legislative stakeholders shared that they would be willing to consider proposing a bill to make the tourism survey mandatory, similar to the statute for the agricultural declaration form.

"I would love it to be a law because even on that form I think there should be other stuff added on. And I've never asked question why they had, just how they selected those questions. But yeah, should be mandatory." (State Senator)

"Well, if you said that the State is the one that's requiring it, then I'm happy to introduce or sign on to a bill next year to say that the tourism figures or tourism survey is mandated along with agricultural survey." (State Senator)

- 8.3.1.1: Other legislative stakeholders shared being more cautious about passing new laws.

"I would like it to be more required. But in terms of like actually passing a law about it. It's so like, devils in the details. It's really hard to pass a law and I generally try not to pass laws unless it's absolutely necessary just because it's so hard to go change them later. Like the level of specificity of what's in the law is like, do we need to outline in the bill what exactly are the questions of it? It just gets to be a kind of a hindrance." (State Representative)

- **8.3.2: Digitization Efforts Should Receive Support in Hawai'i:** It was mentioned that legislation around digitizing the In-flight Form would likely receive support due to prior discussions around the idea. Others personally shared that they would be willing to make adjustments to the current law to accommodate a digitization effort.

"I think absolutely. There's been discussions in previous years about like, why don't we digitize? Why don't we get rid of the form altogether? Because I think everybody recognizes that the paper forms are an administrative burden that nobody really thinks is necessary. And I think they would be super supportive of digitization in general. It would probably just be more of a compromise of like, using the same form but adding a link and saying like, if you want to do it online, you can do it here instead of forcing the airlines to do that. But I have no problem forcing the airlines to do that. I just think it might have a hard time passing legislature." (State Representative)

9: IMPLEMENTATION

9.1: PLANNING & PREPARATION

- **9.1.1: Ample Lead Time Needed for Airlines:** To ensure a successful rollout, airline stakeholders identified the importance of providing ample lead time in the implementation process. As each airline has different processes and operates in various geographic locations, it is important to allow adequate time for each to fully understand how to integrate a digital In-flight Form into their current operations.

"I think there needs to be a lot of lead time associated with implementing it. Change is doable with enough lead time. And it's important that we not find ourselves with something that we have to do on very short notice, because it's difficult to get across multiple airlines with different processes and geographies to make a change like that." (Domestic Airline)

- 9.1.1.1: Along with enough lead time to make the necessary preparations, airline stakeholders mentioned the importance of identifying a clear roadmap early on to plan implementation as well as information on requirements, messaging, expectations, and contingency plans.

"We need probably four to six months lead time to make sure that we can just get everything arranged, do the trainings that we need to properly make the digital updates, and get with our in-flight providers to make those changes as well. Because when we look at Wi-Fi, we're depending on their resources, and not ours. So, making sure we have an ample roadmap to do that. Outside of that, just having clear requirements in the upfront. What is the link that we are directing people to? What is the timeframe that they can fill out the form? That way we can set our business rules properly to adhere to that and make sure that we are getting the best adoption in the way that we are setting this up. So just clear, concise messaging, what the expectation is, and what are the contingency plans for when an aircraft Wi-Fi goes out? What is the option there? And what is the option for folks that don't have a smart device that we're not able to complete the form on their home, excuse me on their home computer?" (Domestic Airline)

- **9.1.2: Stakeholder Meetings Needed Prior to Rollout:** Several key stakeholders shared the importance of holding stakeholder meetings prior to rolling out a digital In-flight Form where they can provide feedback and share their concerns.

- 9.1.2.1: A major stakeholder in the process, most airline participants expressed the importance of their teams being involved in the planning process.

"I think it's important that the broader, the airline community as a whole, has an opportunity to provide input into the design of this. It's one thing to say that we're going to digitize it, it's another to design the process by which that happens. And I think having as broad a group of stakeholders involved in that as possible will be very important." (Domestic Airline)

"We need to understand the process and we need you to continue. In addition to this, I've got to find the right people. When you have an idea of how you're thinking of implementing this, it'll help. Because right now, no one was exactly sure what this involves. But as we do that, we definitely need ongoing stakeholder involvement as this is developed. Don't just push something out and say, here's the solution." (Domestic Airline)

- 9.1.2.1.1: In particular, having the airline involved will provide a better understanding of the current infrastructure in place and how a digital form could be integrated.

"Reaching out to some airlines that include not only the business folks that are very familiar with the operations of getting people on board, and then on the technical side is like, this is how our infrastructure works, to gather that information." (Office of Enterprise Technology Services)

- 9.1.2.2: Having a strong insight into daily operations, the HDOA mentioned that they would like to have staff members such as the airport veterinarian or inspector supervisor involved in the planning process.

"It would be nice if I could get, for example, [NAME]. She's the port veterinarian at the airport. Either her or the inspector supervisor because they deal with all of the Ag decks and the arrivals and what have you. They would be useful to have at the table because they would be the ones that experience the current system, and if improvements that are proposed would be useful, or at least not detrimental to what we do." (Department of Agriculture)

- 9.1.2.3: While identified as a stakeholder in this study, the DOT mentioned that they do not see any tangible benefits from either the agricultural declaration form or tourism survey and would not like to be involved in the planning process.

"Because it's either going to be the Department of Agriculture or HTA dealing with this, or it's the airlines. The airport system per se, like I keep saying, DOT does not really truly have any benefits from what we're doing here. Unfortunately, because we're the facilitator and people, that's where they arrive through, that's how we're engaged." (Department of Transportation)

- 9.1.2.4: Keeping collaboration top-of-mind, it was mentioned that it is important for the State to present themselves as genuinely open to receiving feedback and input when involving stakeholders rather than imposing mandates.

"I think the take home on a report on this is not to make it look like the state's trying to impose mandates on everybody. And then if we're able to show the ability to collaborate and ask questions, and offer a mechanism to intake perspectives and opinions, then it'll be a lot easier to find some sort of consensus." (Office of Enterprise Technology Services)

- **9.1.3: Collaboration Among State Departments Desired:** Given that the digitization effort will be reliant upon various state infrastructure, some shared the importance of having state agencies collaborate throughout the process.

"I'm a loud proponent of supporting the common infrastructure meaning that if multiple departments have business drivers for having collaborating with some sort of form, then we should be the agencies supporting that common infrastructure and to allow business, the business units to focus on the business priorities. And for us to maintain the, that infrastructure, the systems." (Office of Enterprise Technology Services)

- **9.1.4: Transparency and Public Input:** As digitizing the In-flight Form could potentially link to other state initiatives, it was mentioned that the process should be completely transparent by all vendors and provide avenues for residents to give input on what they would like to see on the form.

"I expect transparency and accountability from all of the vendors. So, I would love if you guys could do like an info briefing. Maybe an info briefing isn't exactly necessary, but some kind of like getting the message out to the public about this. And just kind of like every step of the way, I would like all of the agencies involved to be very transparent and accountable to this. And I would love, maybe not an expectation, but an ideal would be some kind of like a public poll saying what do you want on this form? Should it be also pledged to our keiki? Should it also be links to eco-tourism? That kind of thing." (State Representative)

9.2: ROLLOUT

- **9.2.1: Overlap and Test Survey Methodologies:** Given that a major shift in survey methodology by digitizing the tourism survey could affect the dataset's continuity, it will be important to test the new method before fully implementing a digital form.

"[MODERATOR: Is there any effect to the continuity of the data and the reliability of the tracking over time? If the methodology like this sort of changed significantly?] Yes, I mean, we came back in my day playing with the basic data set, we had this rhetorical question we always were hit with, if we gave out pins on the airplanes, how would that change the survey? How would that change the results? Because then you got greater participation. In any change like that, you got to overlap the methodologies a while and then see what you get for a lot, for a period. And then before you switch over, because you need to know whether or not this is going to work or not." (State Research Vendor)

- **9.2.2: Start Simple:** Being that the digitization effort will experience more operational issues than technical issues, it was shared that beginning with a simple framework such as a mobile-friendly web application will get the form up in a format that can easily be adopted by airlines. As the process becomes more widely adopted, additional features such as an API can be considered.

"We start with a mobile-friendly web application because that's a minimum viable product. And after time, we'll mature an API. And then if the airlines want to integrate and hook into the API, that can be a convenience for the passengers. So, it's tied in that way. But we don't start with a mandate on the mobile app." (Office of Enterprise Technology Services)

"The technology isn't the issue at all. I mean, it's really how would this work operationally with the current laws as they are or current regulation as they are? So how do you guarantee every passenger registers preflight? And if they don't, how do you enforce that they, every passenger, registers post-flight? Pretty much, like the airlines are saying that doing anything without a connection in the air is almost impossible. I mean, you could have an app, of course, that you do it in. You can fill it in the air, but it actually transmits once it gets connected on arrival. So, of course, you could have that, but that would be just an app that the individual passengers would have on their phones, not something that the airline would embed into their iPads or any kind of technology that they provide." (Office of Enterprise Technology Services)

- **9.2.3: Rollout in a Hybrid Format:** Acknowledging that 100% digital adoption will be difficult to implement due to passengers not having mobile devices or the time needed to train airline staff, several stakeholders mentioned that rolling out the form in a hybrid format with the paper option still available would be the most convenient way to transition.

"If I were to do this, I would actually maintain the traditional paper process and launch this in parallel. Watch what the adoption curve looks like. Try different promotions and things. And then when you have a sense of what the take rate is, kind of build some inertia into the process. That's when it's safe to kind of remove the traditional docket on board and stocking in the arrivals area and things like that." (Domestic Airline)

"I absolutely think we could do the whole switch digitally, especially digitally with the COVID happening. Everybody's super used to QR codes now and doing things on their phone. So, I absolutely think we could just roll it out right away. But we would still need paper forms for the people who cannot." (State Representative)

- 9.2.3.1: Concerned about the negative impacts on the guest experience should the form go digital right away and the impacts on perceptions of airlines and the State of Hawai'i, it was suggested that rolling out in a hybrid format would be ideal.

"I would just suggest that for a while, you have some sort of hybrid while people get used to it, because not only you've got the employees of the airline that have to get used to it, and you've got the customers that have to get used to it. And you'll have people that made reservations ahead of time and maybe didn't get a pop up or an email or something that aren't even aware it exists. And you don't want to make them mad. It's not a good look for the airline. It's not a good look for the State of Hawai'i, making customers upset or angry when they've done nothing wrong, right?" (Domestic Airline)

- 9.2.3.2: It was mentioned that trying to go 100% through state-funded efforts would likely be much more costly than having a third-party vendor develop a digital interface to be used in tandem with paper forms.

"Why can't we do paper and digital to save time, tight? Who cares? The expectation is that it should be easy. But it won't be. I mean, you want to digitize an Ag form in the private sector? You know, we're talking like, two weeks 30 grand. We're going to issue a several million-dollar RFP, and that's going to take us two years." (State Representative)

- **9.2.4: Rollout Instantly:** Others felt that going 100% digital immediately and addressing growing pains as they come up is more effective in getting the process implemented and accepted.

"I want to just flip on the switch. But I know that there are going to be some growing pains. I mean, when you look at Safe Travels, there was no paper thing that we printed. Like oh, here, we're going to transition from paper to digital. We just flipped the switch and there it was. [...] So, I think that's yeah, there's gonna be some initial hiccups and resistance, but in after a year after we implemented, it'll just be something that people expect to do." (State Senator)

- **9.2.5: One Airline Onboard Could Help to Bring Them All Along:** Drawing from the lessons learned when implementing the Safe Travels program, it was shared that getting one airline onboard can lead the others to follow suit; if rolling out the digitization efforts among one partner can produce a benefit such as less waiting time for their passengers, other airlines will be less hesitant to incorporate the process into their operations.

"Yeah, you know what the difference was? That at first, when I approach all the airlines about doing this upon departure and on arrival, they all said no because of the added expense. And the fact that they had to invest in iPads in case somebody didn't have a smartphone and everything else. But [DOMESTIC AIRLINE] basically stepped up and said the support, we'd be willing to do it if our passengers are going to be able to get vetted through and not wait for the lines. So yeah, we worked to, I worked very hard with the [DOMESTIC AIRLINE] representative. We came up with a program. Wow we did it, it did create a lot of logistics problems because basically, they have to add more staff, they have to add iPads. We sent the team from ETS up to Seattle to do training to get them acclimated to the system. We had to set up basically a technical hotline in case somebody had problems doing it. But once people saw, and of all things Mark Rafi, the commentator basically for the Golf Channel and stuff. When he landed and he went through and he didn't have to stand in line, he called [NAME] with HTA. He goes, 'Oh, my God, if you guys want me to do a commercial on this, I will, I can't believe it. The line was so long. And all I have to do is walk through because I were...' After that [DOMESTIC AIRLINE] came to us, [DOMESTIC AIRLINE] came to us, all the other airlines came to us." (Department of Transportation)

9.3: PILOT PROGRAM

- 9.3.1: Start with a Pilot Program with Select Airlines:** As a way to test out a digital form and identify any concerns prior to a full launch, several stakeholders shared that a pilot program with select airlines would be an ideal first step following planning and stakeholder meetings.

"A pilot, maybe with either like a certain airline or certain flights. Anytime we do this, the change management piece is the biggest thing we worry about. Because we have, that's another struggle that we go through, is really just how do we disseminate all of these different nuances and changes to our frontline employees, our flight attendants, our customer service reps?" (Domestic Airline)

"But that's what we're thinking I'm doing like a pilot program with [DOMESTIC AIRLINE] or [DOMESTIC AIRLINE] or something, just to see how it would work, how we could incorporate it into the check-in system. Because with airlines, it would be a win-win for them because they wouldn't have to deal with the flight attendants and paper copies." (Department of Agriculture)

"I think we should pilot it first with maybe one airline in particular and then go from there to see, we can take the kinks out of it? You know, the hiccups and stuff. And then based on that assessment, sit back down again and say, 'Okay, here's where here were some of the roadblocks. How do we fix them before we just go right across the board?'" (State Senator)

- 9.3.2: A Pilot Program Can Test Compliance:** By piloting the digital In-flight Form before a full rollout, compliance rates can be observed on test flights; should stakeholders agree that the compliance rates in the pilot are high enough, it may negate the need for airlines to implement methods of enforcement requiring extra resources.

"I think, as part of the pilot, what I would say is, let's learn how many people are actually using it. If 90 plus percent of people are using it, I don't know that, again, this is just my personal opinion not working for the entity, right? Do you need a compliance piece? [...] If we already know the majority of customers overwhelming majority are doing it, is it worth the extra manpower to make that happen, right? If it if we're not seeing that adoption rate, maybe it's just a verification upon disembarkation, right? And if you don't have the form up, you gotta go somewhere else. But I think that that burden would have to fall on the state to complete that it is not something we would want to provide additional bodies to anything like that." (Domestic Airline)

- 9.3.3: Pilot Needs to Be On All Hawai'i-Bound Flights:** As airlines will need to train all of their staff on the new procedures involved in digitizing the form, airline stakeholders mentioned that they would want the pilot to be on all of their Hawai'i-bound flights rather than phasing it based on geographic origin.

"I think it's important to test. And so, I think it's certainly possible to prototype this and test it on a limited number of flights, that's something that we do all the time with our own processes. I don't know whether phasing it by geography or something like that over a long period of time is necessarily

helpful. Because again, we've got staff who move across, you know our staff aren't associated with a given flight or geography to say, so to say, we're going to do this, you know, on flights to California, means we have to train 100% of our people anyway." (Domestic Airline)

- 9.3.3.1: On top of the training considerations, it was mentioned that some airlines program their flights based off of destination, not necessarily origin; this would make it difficult to pilot specific flights based off of geographic location.

"The way we would need to program it would be every flight because we can program this based on destination, not necessarily on origin. So, it'd be difficult for us to say only flights from Long Beach to Honolulu. But if we were doing all flights to Hawai'i, that's much easier, especially from a staff training perspective." (Domestic Airline)

- **9.3.4: Data Sharing Will Be Important:** Willing to share open-end comments provided by airline customers and wanting to receive data regarding compliance rates, it was mentioned that data sharing among the State of Hawai'i and airlines will be an important part of a pilot program.

"We get customer feedback and so, if there's comments and things that we are getting in our post trip surveys, we of course are happy to share that. We won't share the customer's name and demographic information, but we can at least share, 'Hey, we asked. 80% of customer said they love this. And here's some of their open-ended comments.' And vice versa, sharing, what is the adoption rate? How many successful forums? What's the abandon rate of folks going to them? And that way we can maybe work on our end to work on comms and that kind of stuff to make that better." (Domestic Airline)

- **9.3.5: A Pilot Needs to Be Substantial to Get Airlines Onboard:** Given the amount of resources that will be needed to implement a new system and train staff, it was shared that some airlines may only be willing to participate in a pilot program that is substantial enough (one year) as anything too short will not provide enough time to work out kinks in the program.

"I think a pilot would be appropriate given that it's at least a year. We wouldn't want to invest the time, money in process changes outside of that. And with the thought that the pilot would continue, after that year, if we know enough that we think this is going to work in the pilot is kind of a, let's work out the kinks and get it going. But to then, start it, take it down, and then restart it again, would be tough to convince an organization to make the change. So, we are definitely interested in a pilot, I would say, as long as you know, we're doing it at least a year, because then the value is there, and the amount of work and costs and that kind of stuff." (Domestic Airline)

APPENDIX B: SURVEY OF TRAVELERS

1.1: IN-FLIGHT FORMS

Those taking part in the study were asked if they completed the two forms pictured below on their most recent transpacific flight to the state.

| | |
|--|--|
| | |
| <p>PLANTS AND ANIMAL DECLARATION FORM</p> | <p>HAWAII TOURISM SURVEY</p> |
| <p>OVERALL 92%</p> | <p>OVERALL 79%</p> |
| <p>Hawaii Resident 83%</p> | <p>Hawaii Resident 53%</p> |
| <p>U.S. Mainland Resident 92%</p> | <p>U.S. Mainland Resident 82%</p> |

Overall, 92% of those polled indicated they completed the Plants and Animal Declaration Form on their most recent trip to Hawai'i. Nearly all (92%) of the U.S. Mainland visitors taking part in the study say they completed this section of the form. Completion numbers were lower amongst local residents at 83%.

As far as the Hawai'i Tourism Survey was concerned, 79% said they filled out this form on their most recent trip to the state. Amongst local residents, only 53% filled out this form while the numbers were significantly higher amongst travelers from the U.S. Mainland at 82%.

Overall, a majority (79%) of travelers filled out both forms on their most recent trip while 13% said they only filled out the Plants and Animal Declaration portion.

- More frequent travelers are the least likely to complete the Hawai'i Tourism Survey. For example, amongst those who have traveled from the U.S. Mainland to Hawai'i four or more times in the past two years, only 69% filled out the Hawai'i Tourism Survey on their most recent trip to the state. By comparison, completion of the Hawai'i Tourism Survey increases from 80% to 82% amongst less frequent travelers (<4 trips in the past two years).
- More educated segments or those with a four-year college degree (83%) were statistically more likely to have filled out the Hawai'i Tourism Survey than were those without a college degree (71%).

Next, research respondents were asked if they personally completed the In-flight Form or if someone else in their travel party did so.

| | TOTAL | HAWAI'I | U.S. MAINLAND |
|--|-------|---------|---------------|
| BASE | 1,097 | 354 | 743 |
| I personally completed the form | 93% | 81% | 94% |
| Someone else traveling with me filled out the form | 6% | 14% | 5% |
| No one in our travel party completed the form | 1% | 2% | 0% |
| Unsure/ Don't recall/ Did not see any forms | 0% | 3% | - |

Blue highlighting indicates statistically significant differences compared to segments highlighted in gray.

Percent totals may not sum to 100% due to rounding.

A majority (93%) of those taking part in the study completed the form themselves during their most recent trip to the state. When segmented by area of residency, we find that travelers based on the U.S. Mainland were statistically more likely to have filled out the form themselves while local travelers who took part in the study had a statistically higher proportion of respondents who indicated someone other than themselves in their travel party filled out the form.

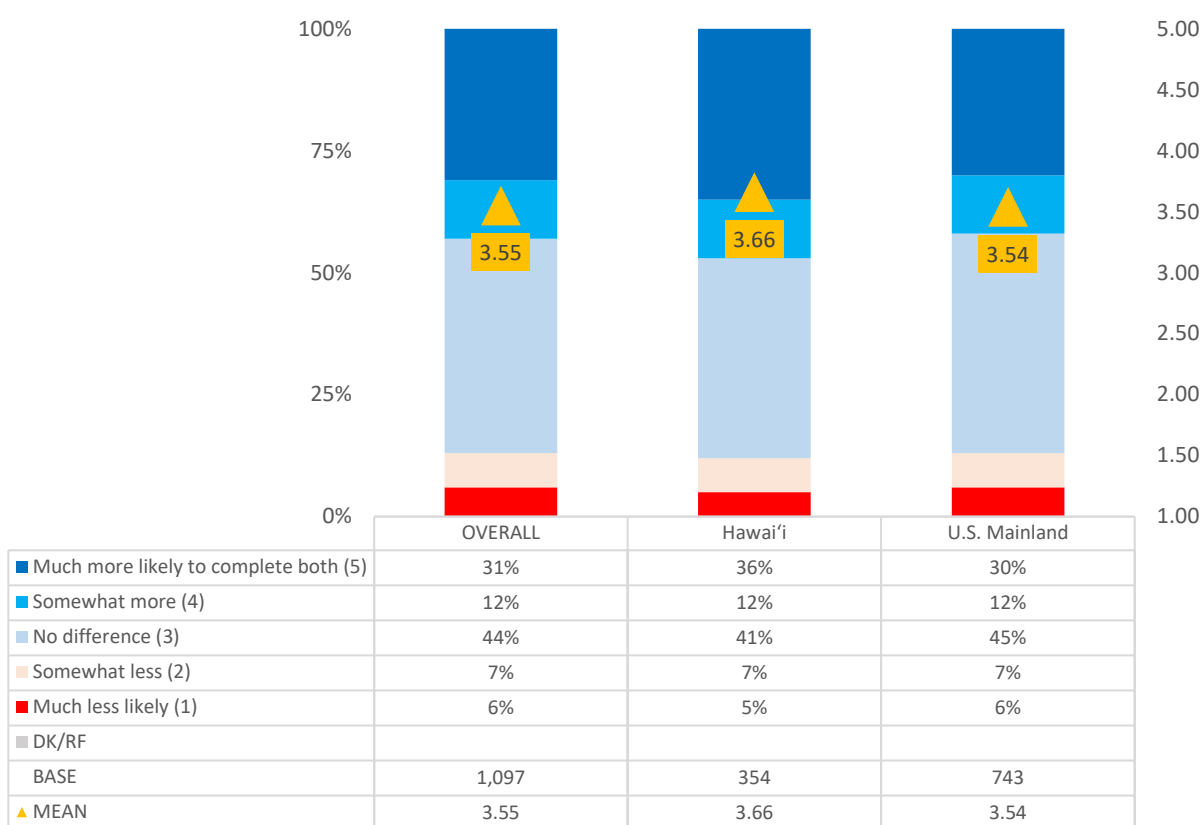
Next, those few individuals (n=20) who did not complete this form were asked why this was. Half (49%) of this tiny subset of the sample said they were simply unaware of the form(s) being tested. 20% did not have with them or could not source a pen or pencil. 11% did not fill out the form thinking it was not important enough to do so while 4% percent did not have time. Once again, please note the small sample size when examining these results.

1.2: ONLINE FORMS

Each respondent was then presented with the following scenario:

If the form were offered online instead of on paper, how would that affect your willingness to complete both the Plants and Animal Declaration and Hawai'i Tourism Survey?

They were then asked to rate the likelihood they would complete both forms online using the following five-point rating scale highlighted in the table below. In addition to the percentage results, a mean or average score was also computed. The higher the mean score (closer to 5.00), the greater the likelihood they would complete both forms.



Overall, 31% of the transpacific travelers polled provided a Top Box response indicating they would be much more likely to complete both forms if there were an online option. Of the remainder, 12% would be somewhat more likely while 13% indicated they would actually be less likely to fill out the forms online. Of the remainder, 44% are indifferent regarding this scenario, indicating it would make little to no difference in the likelihood they would fill out both forms. When these results are looked at in the aggregate, they result in a mean or average score of 3.55 out of a possible 5.00. The midpoint on a five-point scale is 3.00 for reference which indicates a net greater likelihood of filling out the form if there were an online option.

- *Enthusiasm for an online option gain in popularity amongst more frequent transpacific passengers. For example amongst those who have made multiple trips from the U.S. Mainland to Hawai'i in the past two years, 36% say they would be much more likely to fill out the forms online if it were offered. As a point of comparison, this Top Box score falls to 26% amongst those who traveled from the U.S. Mainland to Hawai'i just once in the past two years.*
- *A digital option is a greater incentive amongst younger travelers. For example, 40% of those polled under the age of 35 say they would be much more likely to fill out the forms in question if there were an online option. As a point of comparison, this Top Box result is just 16% (much more likely) amongst seniors.*
- *When the results are segmented by gender, we find males (34% Much more likely) more likely to be positively impacted by a digital option than were females (28% Much more likely).*

1.3: PREFERRED ONLINE DISTRIBUTION CHANNEL

1.3.1: OVERVIEW

Next, research respondents were asked to choose from the following list of options their preferred method of filling out the two forms in question from the prior page.

| | TOTAL | HAWAI'I | U.S. MAINLAND |
|--------------------------------|------------|------------|---------------|
| BASE | 1,097 | 354 | 743 |
| Mobile device – website | 57% | 41% | 59% |
| Mobile device – downloaded app | 19% | 27% | 18% |
| NET MOBILE DEVICE | 76% | 68% | 77% |
| Computer/ laptop - website | 5% | 7% | 5% |
| NET ONLINE | 81% | 75% | 83% |
| Paper | 19% | 23% | 18% |
| Other | 1% | 1% | 1% |

Blue highlighting indicates statistically significant differences compared to segments highlighted in gray. Percent totals may not sum to 100% due to rounding.

Overall, 81% of those polled chose an online option with 19% preferring the current paper forms.

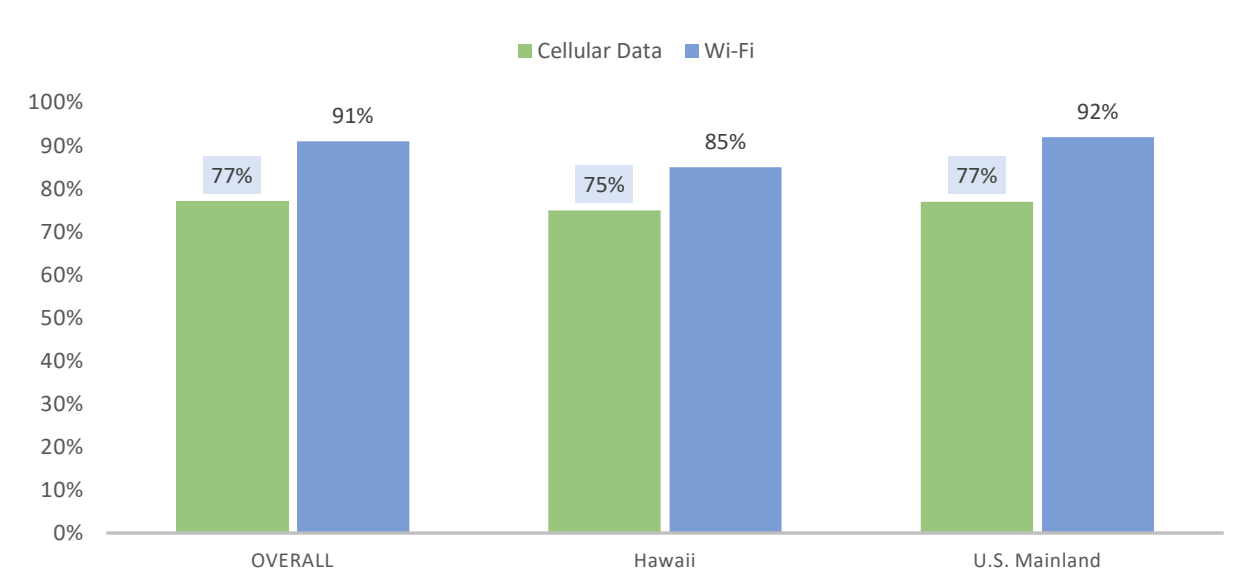
- *Preference for maintaining the current paper system is most popular amongst seniors 65 and older. One in four (27%) in this age bracket prefers the current paper option amongst the options tested in this section.*
- *When the results are segmented by gender, we find that females (23%) were statistically more likely to choose filling out these forms in the current paper format than were males (13%).*

Three in four (76%) respondents would prefer to fill out the forms on a mobile device. A little more than half (57%) of the overall sample say their preferred method is via a mobile device that accesses a website that is mobile-friendly while one in five (19%) appears willing to download an app specific to these forms. Completing the forms on a computer was a far less popular option at just 5%.

- *The willingness and popularity of downloading an app becomes a statistically more popular option as travel from the U.S. Mainland to Hawai'i increases. For example, amongst those who have traveled from the U.S. Mainland to Hawai'i four or more times in the past two years, 25% chose downloading an app as their preferred method of filling out these forms. As a point of comparison, just 13% who traveled only once in the past two years between the U.S. Mainland and Hawai'i chose this option as their first choice.*

- *Visitors from the U.S. Mainland (59%) were statistically more likely to prefer using a mobile device that accesses a mobile-friendly website to complete these forms than were local residents (41%). Conversely, local residents (27%) appear more open to downloading an app compared to U.S. Mainland travelers (18%).*
- *When segmented by age we find using a mobile device that can access a mobile-friendly website to fill out these forms was a far more popular option amongst younger travelers under the age of 35 (69%). By comparison, preference for this channel declines with age, eventually bottoming out at 36% amongst senior travelers.*

Next, research respondents were asked if they would be willing to use their personal cellular data to complete the forms in question online and also, if they would be willing to use free Wi-Fi service on the airplane flying over or at the airport to complete the forms.



The results show that three in four (77%) would be willing to use their own cellular data to complete these forms. The idea of using free Wi-Fi at the airport is a more popular option with 91% being open to this idea.

- *Male (82%) respondents appear more willing to use their own personal cellular data plan to fill out these forms than were females (73%).*
- *When segmented by age, we find that seniors at 67% were the least willing to use their own cellular data to fill out these forms. As a point of comparison, 80% of adults under the age of 50 would be willing to use their own cellular data to fill out these forms.*

- *When it comes to using free Wi-Fi either on the plane or at the airport, we find U.S. Mainland (92%) residents more open to using these Wi-Fi services to fill out these forms than local residents (85%).*
- *Once again, seniors 65 and older (79%) appear the least likely or willing to use free Wi-Fi in these areas to complete these forms. As a point of comparison, amongst adults under the age of 35, 97% are willing to use free Wi-Fi at the airport to fill out these forms.*

1.3.2: ONLINE VS PAPER PROFILE

The table below provides a profile comparing those who would prefer to complete the forms online versus those who prefer the paper forms.

| | ONLINE | PAPER | COMMENT |
|-----------------------------|------------|--------------|--|
| SAMPLE | | | |
| Hawai'i | 11% | 15% | |
| U.S. Mainland | 89% | 85% | |
| TRIPS TO HAWAI'I | | | |
| MEAN | 2.64 | 2.28 | |
| MEDIAN | 2 | 1 | |
| FORMS HISTORY | | | |
| Plants & Animal Declaration | 93% | 89% | |
| Tourism Survey | 80% | 76% | |
| AGE | | | Those who prefer to fill out the forms online are statistically younger on average compared to those who prefer to the paper format. |
| 18-34 | 31% | 27% | |
| 35-49 | 22% | 13% | |
| 50-64 | 28% | 28% | |
| 65+ | 20% | 32% | |
| MEAN | 46.85 | 51.46 | |
| COLLEGE GRADUATE | | | |
| Yes | 64% | 61% | |
| No | 35% | 36% | |
| Rf | 1% | 3% | |
| GENDER | | | Statistically higher proportion of males among those who prefer to use an online format. |
| Male | 48% | 32% | |
| Female | 52% | 67% | |

Red bold text indicates statistically significant differences compared to the other segment.

Percent totals may not sum to 100% due to rounding.

1.3.3: APP VS WEBSITE PROFILE

The table below provides a profile comparing those who would prefer to complete the forms online via a downloaded app compared to those who would prefer to simply fill out the forms via a website.

| | APP | WEBSITE | COMMENT |
|-----------------------------|--------------|------------|--|
| SAMPLE | | | |
| Hawai'i | 18% | 10% | Higher proportion of local residents among those who prefer to download an app. |
| U.S. Mainland | 82% | 91% | |
| TRIPS TO HAWAII' | | | |
| MEAN | 3.01 | 2.52 | |
| MEDIAN | 2 | 1 | |
| FORMS HISTORY | | | |
| Plants & Animal Declaration | 91% | 94% | |
| Tourism Survey | 77% | 82% | |
| AGE | | | |
| 18-34 | 21% | 34% | Those who are willing to download an app are statistically older than those who would prefer to use a mobile-friendly website or use their computer to access a website. |
| 35-49 | 23% | 22% | |
| 50-64 | 28% | 27% | |
| 65+ | 29% | 17% | |
| MEAN | 51.26 | 45.50 | |
| COLLEGE GRADUATE | | | |
| Yes | 55% | 66% | Higher proportion of college graduates amongst those who would prefer a mobile-friendly website. |
| No | 41% | 33% | |
| GENDER | | | |
| Male | 48% | 48% | |
| Female | 51% | 52% | |

Red bold text indicates statistically significant differences compared to the other segment.

Percent totals may not sum to 100% due to rounding.

1.4: PREFERRED TIMELINE

Each respondent was then asked if an online form was to be made available, when they would prefer to fill it out from the following list of options.

| | TOTAL | HAWAI'I | U.S. MAINLAND |
|---|-------|---------|---------------|
| BASE | 1,097 | 354 | 743 |
| During the flight | 32% | 26% | 33% |
| Prior to arriving at the airport | 32% | 32% | 32% |
| In the airport prior to boarding my flight to Hawai'i | 21% | 25% | 21% |
| Prefer paper | 13% | 18% | 13% |
| Other | 1% | 0% | 1% |

Blue highlighting indicates statistically significant differences compared to segments highlighted in gray. Percent totals may not sum to 100% due to rounding.

The results from this section show no clear preference in terms of when and/or where passengers would prefer to fill out this form. A third (32%) of those polled would prefer to fill out the form(s) prior to arriving at the airport. An equal number (32%) indicates a preference for filling out the form during their flight while 21% would like an opportunity to fill out the form(s) at the airport prior to boarding their flight to Hawai'i. 13% percent would like to continue the current paper format.

- *Those that show a preference and appear willing to download an app were statistically more likely to choose the option of filling out these forms prior to arrival at the airport at 45%. As a point of comparison, this number falls to 33% amongst those preferring to fill out the forms on a mobile-friendly website/ website.*

1.5: TRAVEL HISTORY

In this section of the report, research respondents were asked about their recent travel history.

1.5.1: TRANSPACIFIC TRAVEL (U.S. MAINLAND TO HAWAI'I) HAWAI'I RESPONDENTS

The first section asked local respondents to identify from the following list of options the timeline for their most recent trip that included travel from the U.S. Mainland to Hawai'i.

| | HAWAI'I ONLY |
|--|--------------|
| BASE | 354 |
| Within the past year | 70% |
| One year but less than two years ago | 13% |
| Two years but less than five years ago | 17% |

Among the Hawai'i residents polled, 70% traveled from the U.S. Mainland to the state within the past year. 13% percent made a similar trek anywhere from one to two years ago while the remaining 17% of this subset of the sample made this trip anywhere from two to five years prior.

1.5.2: TRANSPACIFIC TRAVEL (U.S. MAINLAND TO HAWAI'I) PAST TWO YEARS

Each respondent was then asked how many times they have traveled from the U.S. Mainland to Hawai'i in the past two years.

| | TOTAL | HAWAI'I | U.S. MAINLAND |
|-------------------|-------|---------|---------------|
| BASE | 1,072 | 329 | 743 |
| Single trip | 50% | 23% | 54% |
| Two trips | 23% | 21% | 24% |
| Three trips | 10% | 15% | 9% |
| Four trips | 5% | 15% | 4% |
| Five trips | 3% | 7% | 3% |
| Six or more trips | 8% | 19% | 6% |
| MEAN | 2.57 | 3.70 | 2.42 |
| MEDIAN | 1 | 3 | 1 |

Blue highlighting indicates statistically significant differences compared to segments highlighted in gray. Percent totals may not sum to 100% due to rounding.

The typical respondent has traveled between the U.S. Mainland and Hawai'i an average of 2.57 times in the past two years with the median being a single trip. As one might anticipate, local respondents have made flights such as these on a more frequent basis.

1.5.3: HAWAI'I AIRPORT

Next, research respondents were asked to identify the airport they arrived at in Hawai'i on their most recent trip from the U.S. Mainland.

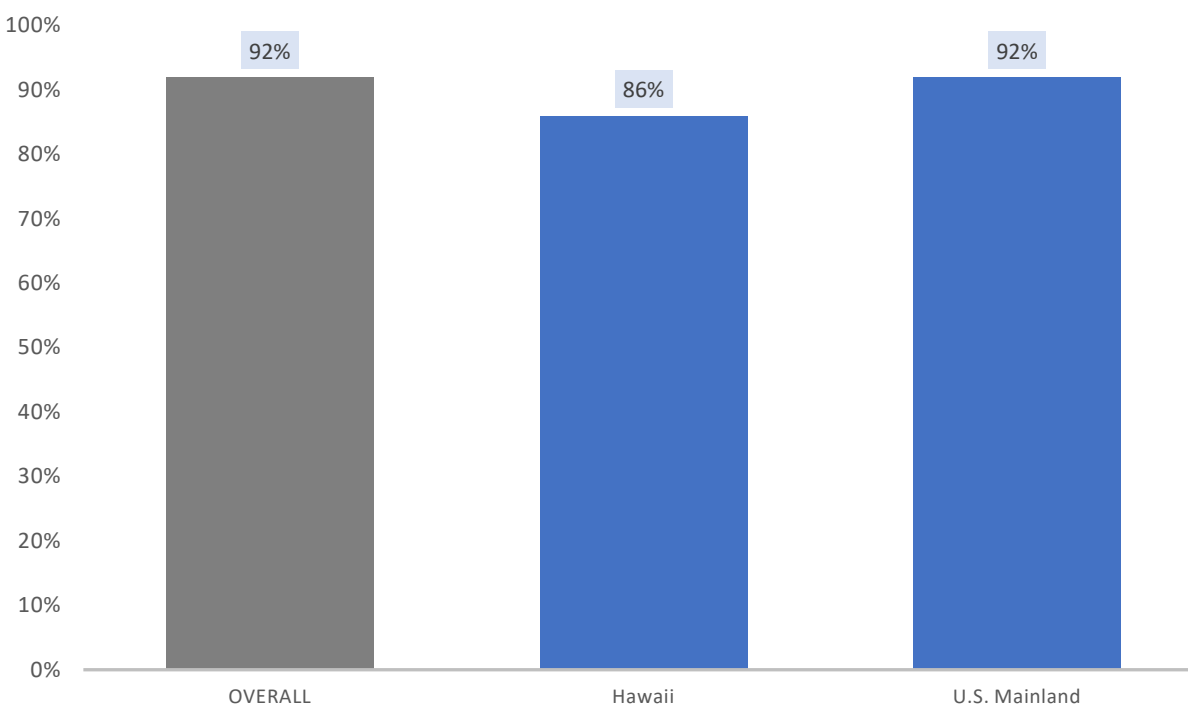
| | TOTAL | HAWAI'I | U.S. MAINLAND |
|--|-------|---------|---------------|
| BASE | 1,097 | 354 | 743 |
| Daniel K. Inouye International Airport | 59% | 74% | 57% |
| Kahului Airport | 21% | 6% | 23% |
| Ellison Onizuka Kona International Airport | 13% | 6% | 14% |
| Līhu'e Airport | 5% | 0% | 6% |
| Hilo International Airport | 2% | 13% | 1% |
| Other | 0% | 1% | - |

Blue highlighting indicates statistically significant differences compared to segments highlighted in gray. Percent totals may not sum to 100% due to rounding.

A little more than half (59%) who took part in the study arrived at Daniel K. Inouye International Airport. Arrivals at Kahului Airport ranked a distant second at 21% followed by those that flew into Ellison Onizuka Kona International Airport at 13%.

1.6: ACCESS TO TECHNOLOGY- SMARTPHONE

At the outset of this section of the study, research respondents were asked if at least one individual in their travel party had access to an internet-enabled smartphone during their most recent trip to Hawai'i.



Nearly everyone polled arrived in Hawai'i with at least one individual that had a smartphone with internet access (92%).

- *14% of those who prefer the current paper format traveled to Hawai'i from the U.S. Mainland without anyone in their immediate travel party possessing an internet-enabled smartphone. 7% who have a preference for an online option also traveled to Hawai'i without anyone in their travel party having a smartphone with internet access.*

1.7: SOURCES OF INFORMATION – CHANGES TO ONLINE FORM

In this section of the study, those taking part in the research were asked to choose from a list of options of sources of information they would look to for changes in online forms.

| | TOTAL | HAWAI'I | OTHER |
|--|-------|---------|-------|
| BASE | 1,097 | 354 | 743 |
| Email communication from airline or travel agency | 56% | 37% | 58% |
| State of Hawai'i website (hawaii.gov) | 47% | 62% | 44% |
| Airline/ travel agency website | 41% | 47% | 40% |
| Gate/ in-flight announcements | 40% | 36% | 41% |
| Hawai'i Tourism Authority website (hawaiiauthority.org) | 24% | 35% | 23% |
| State of Hawai'i Department of Transportation website (hidot.hawaii.gov) | 19% | 29% | 18% |
| gohawaii.com | 12% | 16% | 12% |
| Social media | 9% | 14% | 8% |
| In-flight magazine | 8% | 13% | 8% |
| Other | 2% | 2% | 2% |

Blue highlighting indicates statistically significant differences compared to segments highlighted in gray.

The top two sources of information would be email communications from the airline and/or travel agency at 56% followed by those seeking information from the State of Hawai'i website (hawaii.gov) at 47%. Rounding out the top four were airline/ travel agency websites (41%) followed by the 40% who rely on announcements at the gate and during the flight.

When the results are segmented by area of residence, we find local respondents more reliant on websites from state government and other local entities. Conversely, those visitors from the U.S. Mainland are more reliant on airline websites and any travel agency if they are using one.

- *Female respondents are more likely to seek out or prefer to be informed via announcements at the gate and/or in-flight as well as in-flight magazines while males would look to the DOT website for guidance in greater proportions.*
- *Younger segments of the sample are more likely to seek out information via the State of Hawai'i website with seniors being the least likely to rely on this online resource.*

1.8: PROFILE OF RESPONDENTS

The table below provides a recap of the profile of respondents.

| | OVERALL | COMMENT |
|---------------------------|---------|--|
| AREA | | |
| Hawai'i | 12% | Data was weighted to reflect proportion of visitors based on HTA April reporting. |
| U.S. Mainland | 88% | |
| PREFERRED LANGUAGE | | |
| English | 99% | |
| Other | 1% | |
| AGE | | The typical respondent was 47.80 years of age with the median being slightly older at 49 years of age. |
| 18-34 | 30% | |
| 35-49 | 21% | |
| 50-64 | 28% | |
| 65+ | 22% | |
| MEAN | 47.80 | |
| COLLEGE GRADUATE | | |
| Yes | 63% | |
| No | 35% | |
| GENDER | | |
| Male | 45% | |
| Female | 55% | |

Percent totals may not sum to 100% due to rounding

APPENDIX C: DISCUSSION OUTLINE

INTRODUCTIONS

I'd like to start by going around the room asking each of you to introduce yourself, your organization and your role in your organization.

OVERVIEW OF PURPOSE

Anthology and DataHouse have been contracted by the State of Hawai'i to study the feasibility of:

1. "Digitizing" the State of Hawai'i Department of Agriculture (DOA) Plants and Animals Declaration Form and Department of Business, Economic Development and Tourism (DBEDT) tourism survey (collectively known as the two-sided "In-flight Form") and
2. Implementation of a system to manage data storage, collection, and dissemination to stakeholders for such a digitized form.

In-flight Form Digitization has the following objectives:

- Achievable from a technological perspective
- Consistent with the HDOA quarantine requirements
- Consistent with the previous data collection procedures
- Includes the tourism survey
- Consistent with airlines requirements
- Convenient for passengers
- Achieve additional benefits

You have been identified as a key stakeholder in this process, so we would like to hear from you. Your input on this topic will help to inform the technical, operational and financial feasibility of this change. We will be talking with many others, so please try to limit your input to your perspective in your role and that of your organization.

1. IN-FLIGHT FORM DIGITIZATION

What comes to mind when I say: "digitization of the In-flight Form for the State of Hawai'i?" What do you think of? What do you think that means?

1.1. What is your first reaction to the idea of changing the process and making the form digital?

1.2. What might digitization of the In-flight Form entail?

1.2.1. What alternatives exist for digitizing the form as it exists now?

1.2.2. Are you aware of other states, territories, or countries that have digitized a similar form? If so, was it successful?

1.3. What benefits would you hope are realized for your organization by digitizing the In-flight Form?

1.4. What concerns, if any, do you have with this idea of digitization? Why are these concerns? What informs / drives this concern for you/your organization?

1.5. Did you research or participate in any proof of concept or pilot to digitize the In-flight Form? If so,

1. What were the findings?
2. What technologies were used?
3. What was the cost?

2. CONSIDERATIONS IN ANY CHANGE

2.1. As the State looks at its options for digitizing the form – regardless of the approach chosen to make the form digital - what general considerations must they take into account?

2.2. We understand there are a number of steps in the process for the In-flight Form. Which of these steps involve you/your organization? (*Show list to participant on separate printed page*)

- Data Collection** – could include printing, delivery/receipt of bulk forms, distribution to passengers, collection from passengers.
- Compliance** – ensuring at least one individual per travel party completes the form
- Processing** – scanning / processing data, delivery of data to users
- Use of Data** – manipulating or analyzing raw data, using findings

[Interviewer to probe on each section based on selections above]

3. DATA COLLECTION

3.1. In thinking about how the data – Plants and Animals Declaration Form and DBEDT tourism survey responses – are collected, how do you think this might be done digitally?

3.1.1. Why would the visitor/traveler want to complete the form (i.e., incentive vs compliance)?

3.1.2. Where would visitors complete the form? (prior to airport arrival, at airport, on flight)

3.1.3. How will travelers be notified or informed of the need to complete the form?

3.1.4. When, in the travel process, would they complete it? (prior to check-in [how many days?], check-in, prior to boarding, in-flight)

- 3.1.5. How would they complete it? (check-in kiosk, on personal device [mobile app or website], other way)
- 3.1.6. Who will check to ensure that passengers are filing out the forms correctly?
- 3.1.7. Who will provide technical assistance, if any, to passengers?
- 3.2. What considerations come to mind for you and your organization related to the various ways that respondents would complete the form?
- 3.3. What role would you and your organization expect to play in this process? What would you be willing to do? What, if anything, would you not be willing to do?
- 3.4. Are there differences between O'ahu and the Neighbor Islands when it comes to the process for data collection and handling?
- 3.5. Operational
- 3.5.1. How might your operations/workflow have to change to accommodate this change?
- 3.5.2. What would be required to enable the change to a digital form?
- 3.5.3. How do you envision the rollout of the digital In-flight Form? All at once? As phased approach? What operational considerations do you have for the rollout? Would you be willing to participate in a pilot?
- 3.5.4. What would you need to do to enable this change? What involvement/support/assistance, if any, would you need from other stakeholders? What specific stakeholders would be involved and why?
- 3.5.5. Would the paper form still have to remain for those that can't or elect not to use the digital In-flight Form? What percentage of arrivals would you estimate this might be?
- 3.5.6. Could the daily PAX counts be provided in some other way (i.e., digitally) rather than handwritten on the envelope by the lead flight attendant?
- 3.6. Technical
- 3.6.1. What would be needed from a technology perspective to enable this digitization? What specifically would you need to do? What would others have to do to enable this to happen?
- 3.6.2. What are the general technical and functional requirements for a digital In-flight Form? What specifically would the solution need to do?

3.6.2.1. Any special security and privacy requirements?

3.6.2.2. Any regulatory requirements?

3.6.3. Do you have the technology available now to make this change? If not, what would be required to enable it?

3.6.4. What languages would need to be supported by the digitized In-flight Form? Would it be same as the paper form?

- ENGLISH
- SPANISH
- TAGALOG
- JAPANESE
- KOREAN
- CHINESE

3.6.5. Any other languages needed?

3.7. Financial

3.7.1. What savings, if any, do you think this change would realize for you? How much do you think would be saved by your organization?

3.7.2. Where there any prior budgeting estimates on the cost for developing and supporting the digital In-flight Form in any of the following areas?

- Planning and coordination
- Application development / implementation
- Software maintenance
- Hosting and managed services
- Technical support
- End user support
- Marketing
- Maintaining current paper process

3.7.3. What costs, if any, do you anticipate for your role in this process? How much would these costs be on an annual basis? (If cannot estimate: What more information would you need in order to estimate those costs?)

3.7.4. What costs do you anticipate others having to bear to support this new digital form?

3.7.5. If the paper form is retained for those that can't use the digital In-flight Form, what would be the implication on current costs? Are current costs tied to volume or is it fixed price?

3.7.6. If the tourism survey data had to be collected through an alternative mode, such as intercept surveys, how much would something like that cost?

3.8. User Acceptance

3.8.1. How would your frontline staff, others in your company react to this idea? Would they be accepting of it? Why or why not? What concerns do you expect them to have related to this change?

3.8.2. Anything else related to the data collection portion of this discussion that we didn't talk or ask about?

3.8.3. How will the digital In-flight Form be promoted and marketed to the public?

3.8.3.1. What are the costs for doing this? One-time and recurring?

4. COMPLIANCE

4.1. How would you expect compliance to be enforced for this new digitized form? What should be considered from your perspective in ensuring compliance?

4.2. What are the legal requirements for compliance? Can this be changed if needed?

4.3. What enforcement does the State envision for completing the digital In-flight Form? How would the State know who didn't comply?

4.4. Would it be best to require this of every passenger? Or only one person per travel party, as is the case with the current form?

4.5. What incentives could be used to entice compliance? What punishments could be levied to compel participation?

4.6. What role do you see your organization playing in ensuring the forms are completed as required by law?

4.7. When it comes to compliance, what considerations does your organization have in each of the following areas?

4.7.1. Operational

4.7.1.1. What changes would need to be made to your processes?

4.7.2. Technical

4.7.2.1. What technological solutions could be leveraged?

4.7.2.2. What technology do you currently have to enable compliance?

4.7.2.3. Would you be willing to share any data from your passengers to enable compliance?

4.7.2.4. What technology would need to be developed/implemented?

4.7.3. Financial

4.7.3.1. What would the financial implications be? Compared to the current process, how much would this save? How much would it cost?

4.7.4. User Acceptance

4.7.4.1. What effect would this have on your employees?

5. DATA PROCESSING / SHARING / DISTRIBUTION

5.1. What role would you expect to play in enabling the distribution of the collected data to those entities who need it?

5.2. How might the required information be shared with/ received by those stakeholders who need it, specifically HDOA and DBEDT?

5.2.1. Who should be the custodian of the data?

5.3. Technical

- What technological solutions could be leveraged?
- What technology would need to be developed/implemented?
- What technology do you currently have in place to share/receive data? What specific system requirements would have to be met?
- What integrations would need to be done with other stakeholder systems?
- In what form/format would you require the data be shared/received?

5.3.1. Airline specific

- Are airlines able to send electronic notification to Hawai'i-bound travelers about the need to complete the digitized In-flight Form prior to departure? Are they willing to do so?
- Are airlines able to incorporate the In-flight Form into their check-in process?
 - If so, what would be the process?
- How could the State receive data captured through the process?
- Do passengers have access to the internet on all west-bound flights to complete the form while in flight?
- Are airlines able to continue to provide the paper In-flight Form for those that do not use the digital In-flight Form? How would they know who to distribute to?

Do you use the data collected by the current In-flight Form?

5.4. Financial

- What would the financial implications be? Compared to the current process, how much would this save? How much would it cost?

5.5. Operational

- What changes would need to be made to your processes to enable digital sharing of this data?

What data would be needed from the digital In-flight Form to perform inspections? When would the data be needed?

5.6. User Acceptance

- What effect would this have on your employees?

6. USE OF DATA

6.1. Which data do you currently use from the In-flight Form? How important is that data to your organization? What makes that data so valuable, if at all?

6.2. What benefit(s), if any, would be realized if the data were available digitally? Conversely, what would be the consequences if that data were no longer available?

7. DEFINITION OF SUCCESS

7.1. Looking ahead to the future, what would success look like in a digital In-flight Form? What benefits do you believe will be realized for your organization?

8. CLOSING

Do you have any last comments on anything we talked about today? Anything I didn't ask that I should have about digitizing the In-flight Form?

Mahalo for sharing your perspective on this important research!

APPENDIX D: SURVEY INSTRUMENT

- AG1. When was the last time you traveled home from the mainland U.S. to Hawai'i?
- 1 Within the last year
 - 2 One year, but less than two years ago
 - 3 Two years, but less than five years ago
 - 4 Five years ago or more **(SKIP TO NEXT SECTION)**
 - 5 Never **(SKIP TO NEXT SECTION)**
- AG2. On this last flight home to Hawai'i, at which airport did your flight arrive from the mainland U.S.?
- 1 Daniel K. Inouye International Airport (O'ahu)
 - 2 Ellison Onizuka Kona International Airport at Keahole (Kona, Hawai'i Island)
 - 3 Hilo International Airport (Hilo, Hawai'i Island)
 - 4 Kahului Airport (Maui)
 - 5 Līhu'e Airport (Kauai)
 - 6 Other airport (please specify _____)
- AG3. In total, including your most recent trip, how many times have you flown between Hawai'i and the U.S. Mainland in the past two years? (Please consider each roundtrip as one trip.) _____
- AG4. On your most recent flight into Hawai'i, did you or someone else in your travel party complete the In-flight Form? (Only one form is required for each travel party.)
- 1 I personally completed the form **(GO TO AG5)**
 - 2 Someone else travelling with me filled out the form **(GO TO AG5)**
 - 3 No one in our travel party completed the form **(GO TO AG6)**
 - 4 Not sure/didn't see any forms **(GO TO AG6)**
- AG5. On your most recent flight into Hawai'i, which part(s) of the form did you complete?
- 1 Completed both sides of form—both Plants and Animals Declaration and tourism survey
 - 2 Only completed Plants and Animals Declaration portion
 - 3 Don't know / Not sure
- AG6. Why didn't you or someone else in your travel party fill out the form? (Select all that apply)
- 1 I wasn't aware of the form
 - 2 I didn't have time
 - 3 Couldn't find a pen or pencil
 - 4 Didn't think it was important
 - 5 Didn't know how to fill it out
 - 6 Other (please specify)

- AG7. If the form were offered online instead of on paper, how would that affect your willingness to complete both the Plants and Animals Declaration and tourism survey?
- 1 Much more likely to complete both
 - 2 Somewhat more likely to complete both
 - 3 Would make no difference
 - 4 Somewhat less likely to complete both
 - 5 Much less likely to complete both to complete both
- AG8. If you were able to complete the In-flight Form online, which device would you prefer to use?
- 1 Using my smartphone or tablet – by downloading an app
 - 2 Using my smartphone or tablet – by accessing a mobile-friendly website
 - 3 On my computer – by accessing a website
 - 4 I would prefer a paper form
 - 5 Other (please specify _____)
- AG9. If you were able to complete the form online on your personal computer or mobile device, when would you most prefer to do so?
- 1 Prior to arriving at the airport
 - 2 In the airport prior to boarding the flight to Hawai'i
 - 3 During the flight
 - 4 I would still prefer a paper form to fill out during the flight
 - 5 Other (please specify _____)
- AG10. On your most recent flight to Hawai'i, did you or someone in your immediate travel party travel with an internet-enabled smartphone?
- 1 Yes
 - 2 No
- AG11. Would you be willing to use your personal cellular data to complete the form online?
- 1 Yes
 - 2 No
- AG12. Would you be willing to use free Wi-Fi (in the airport or on the airplane) to complete the form online?
- 1 Yes
 - 2 No
- AG13. Where would you expect to find information about a change to an online form? (Select all that apply)
- 1 State of Hawai'i website (hawaii.gov)
 - 2 Hawai'i Tourism Authority website (hawaiitourismauthority.org)
 - 3 State of Hawai'i Department of Transportation website (hidot.hawaii.gov)
 - 4 gohawaii.com

- 5 Airline and/or travel agency website
- 6 Email communication from airline or travel agency
- 7 Social media
- 8 In-flight magazine
- 9 Gate and in-flight announcements
- 10 Other (please specify)

The paper In-flight Form is offered in English, Japanese, Korean, Chinese, Tagalog and Spanish.

AG14. Which is your preferred language?

- 1 English
- 2 Japanese
- 3 Korean
- 4 Chinese
- 5 Tagalog
- 6 Spanish
- 7 Other (Please specify)