KTC
Online Instructional Tools for Motor Carriers

Kentucky Transportation Center
College of Engineering, University of Kentucky, Lexington, Kentucky

in cooperation with
Kentucky Transportation Cabinet
Commonwealth of Kentucky

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Online Instructional Tools for Motor Carriers

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16. Abstract

Commercial motor carrier customers on Kentucky highways must register and pay taxes for licensing and credentialing requirements. The Kentucky Transportation Cabinet (KYTC) provides an online Motor Carrier Portal that offers information and instructions on meeting these requirements, but customers have increasingly resorted to calling into KYTC's motor carrier help desk, thereby straining limited personnel resources. The Kentucky Transportation Center (KTC) coordinated with KYTC to develop a series of online instructional videos that can better assist customers with applying for and meeting credentialing requirements.

KTC researchers used a three-phase approach to determine the feasibility and requirements for instructional videos. First, they investigated the use of online videos provided by other state departments of transportation for motor carrier customers. Second, KTC collected and analyzed over 305,000 customer service records to better understand the tax categories and key words commonly associated with high call volumes and durations. Finally, researchers interviewed KYTC customer service representatives who interacted with motor carrier customers to learn about common interaction themes. Using this approach, KTC successfully developed three priority instructional videos for KYTC including (1) IRP Requirements and Account Creation, (2) KYU Account Creation, and (3) KYU Account Reactivation.

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Executive Summary

The Kentucky Transportation Center (KTC) research team conducted a three-phased project to assist the Kentucky Transportation Cabinet (KYTC) in providing licensing and credentialing instructional tools to motor carriers through their online Motor Carrier Portal. Motor carrier customers must register and pay taxes on licensing and credentialing requirements to operate on Kentucky's highways. KYTC provides instructions and online applications for those requirements on their Motor Carrier Portal but in recent years, customers have increasingly opted to call into KYTC's Help Desk. This call volume has strained KYTC's limited personnel resources and has led to excessive call wait times. To strengthen KYTC's outreach to motor carrier customers, the KTC research team investigated other state department of transportation's online instructional videos for motor carriers, aggregated and analyzed call service records to identify common themes, and developed motor carrier instructional videos to better instruct customers through the most common licensing and credentialing requirements.

KTC researchers conducted a literature review on existing tutorial videos used by other state departments of transportation (DOTs) and targeted toward their motor carrier customers. The purpose of the review was to assess the availability and feasibility of instructional videos for DOT customers and to determine the potential of applying similar platforms to KYTC's Motor Carrier Portal. KTC identified the responsible commercial motor vehicle (CMV) agency for all 50 U.S. states and from that list, randomly selected 20 states for further examination. Researchers evaluated their website platforms to identify those that offered online video tutorials aimed at motor carrier customers. KTC identified four states—Iowa, Wisconsin, Colorado, and Maine—that met these criteria and shared those results with the KYTC study advisory committee for feedback. KYTC officials agreed that developing instructional videos would work for KYTC motor carrier customers and charged KTC with identifying the most common and challenging customer call-in themes for future video development.

The KTC research team collected and analyzed over 305,000 KYTC customer service records from June 13, 2021, through October 31, 2021 to identify the most common call-in themes. This database consisted of customer calls received across all KYTC divisions. From this initial dataset, KTC sorted and extracted approximately 37,000 motor carrier customer calls directed toward the Division of Motor Carriers. Those motor carrier calls were further partitioned into similar categories by subject skill. The top three subject skills of IFTA-KIT-KYU, IRP, and Permits and Licenses comprised the vast majority of motor carrier calls. The subject skills needed to be further categorized into tax categories and call-in topics. The tax categories represented KYTC's licensing and credentialing requirements across six permits including Kentucky Weight Distance (KYU), International Fuel Tax Agreement (IFTA), International Registration Plan (IRP), Kentucky Intrastate Tax (KIT), Department of Transportation (DOT), and Unified Carrier Registration (UCR). KYU and IRP calls represented the highest number of calls into KYTC by both frequency and duration. Next, KTC researchers identified the most common key words used by motor carrier customers during their calls to identify high-priority topics: account registration and reactivating an existing account.

To gather additional customer insights, KTC researchers conducted interviews with KYTC customer service representatives on their experiences with motor carrier customers. These interviews involved four staff members from the Division of Customer Service and two staff members from the One Stop Shop. The Division of Customer Service is responsible for handling initial incoming calls from motor carrier customers and typically handles generalized questions on licensing and registration and tax payments. The One Stop Shop can also handle these general topics but also has the capability to address more specialized themes typically involving IRP-related questions. Interview respondents indicated that KYU and IRP calls represented the highest two call volume categories they received further reinforcing the results from the data analysis. In addition, common call topics

involving KYU were "initially applying for KYU account" and "reactivate KYU account" while those for IRP were "account login" and "understanding IRP requirements."

Using the combined results from the data analysis and interviews, the KTC research team identified the most common themes with motor carrier customer calls. Both the data analysis and interview results indicated KYU and IRP calls were the most frequent and lengthy calls into KYTC. Customers calling about KYU often requested assistance in applying for an initial KYU account or reactivating an existing one, while IRP customers wanted clarification on IRP requirements or assistance with logging into their IRP account. KTC met with the KYTC study advisory committee to discuss these findings and formulate topics for future video development. KYTC officials agreed with these results and identified their three priority topics for instructional videos including (1) IRP Requirements and Account Creation, (2) KYU Account Creation, and (3) KYU Account Reactivation.

KTC developed the videos through a coordinated and collaborative approach from concept development through final production. First, researchers required KYTC system access to the Motor Carrier Portal and its various modules including IRP. Upon receiving access, the KTC content developer familiarized himself with the systems, identified the logical sequence for understanding these module activities, and drafted three video transcripts for future audio. Other KTC research members and the KYTC study advisory committee reviewed the transcripts, offered suggestions, and ultimately finalized the approved transcript products. The content developer utilized an array of software applications to develop the videos and seamlessly blended voice audio, background music, still frames, and motion graphics into three distinct, professional, and easy-to-follow products. KTC provided the three video deliverables and accompanying research report to the KYTC study advisory committee for their Motor Carrier Portal and internal use, respectively.

Chapter 1 Background

1.1 Introduction

The KYTC Department of Vehicle Regulations (DVR) increasingly offers customer support capabilities through the online Motor Carrier Portal. Motor carriers may now register and pay taxes for their IFTA, KIT, and KYU requirements, obtain temporary permits, and check available truck parking via the online portal. The benefits derived from this shift are twofold. Online services provide an efficient means for motor carrier operators to meet their regulatory obligations, while freeing up additional KYTC resources through reduced staffing demands associated with onsite and call center customer support.

1.2 Problem Statement

Despite the Motor Carrier Portal's success, large segments of the motor carrier community encounter difficulties with successfully navigating online services and may choose to call into KYTC's customer service department for routine issues that could be easily answered through other mediums such as online videos. In other instances, customers may prefer speaking with someone directly to engage in transactions or ask questions, rather than taking the time to perform those tasks themselves. Often, customers may feel frustrated about excessive wait times despite KYTC allocating significant human resources for these services through its call support centers. To better assist these customers, KYTC wanted to develop and implement high-value online training videos and instructional services.

1.3 Objectives

The objectives for this project include:

- Identify the most common themes occurring during live-person customer service interactions between motor carrier customers and KYTC staff.
- Develop online training/instructional videos for Motor Carrier Portal customers that address key customer service themes and will improve usability and utilization of online services.

Chapter 2 Literature Review

2.1 Overview

KTC researchers conducted a literature review to find state departments of transportation (DOTs) already using customer tutorial videos. Researchers assessed the availability and effectiveness of instructional videos and determined the potential of applying similar platforms to KYTC's motor carrier portal. The research team developed a methodology to identify the relevant commercial motor vehicle (CMV) agencies by state. The goal was to discover the CMV agencies within a single portal rather than individually searching for the correct agency across all 50 states.

2.2 Methodology

Researchers began their agency search by reviewing the Federal Motor Carrier Safety Administration's (FMCSA) website (https://www.fmcsa.dot.gov/) to identify possible links to other state websites.[1] Specifically, the target was each responsible U.S. state agency—DOT or otherwise—responsible for assisting a given state's CMV carrier population. Although the FMCSA had various topics related to state DOTs and corresponding links, a direct portal with links connecting to applicable state CMV agencies was not found. Next, researchers pivoted their search towards the American Association of Motor Vehicle Administrators (AAMVA), a nonprofit organization representing and serving the interests of motor vehicle administrators and law enforcement.[2] Similar to FMCSA, the AAMVA website (https://www.aamva.org/) had many useful and relevant trainings and materials on CMV safety and compliance measures but did not readily provide direct links to responsible state CMV agencies.

Broadening the search, the research team discovered the usa.gov website, a portal administered by the U.S. General Services Agency. This legislatively mandated portal receives annual appropriations and provides the public with services and information related to federal and state government agencies. In this case, researchers were able to identify a webpage that provided a drop-down menu for all 50 states with corresponding links to their various state agencies (see Figure 1).[3] By searching through the lists of various state agencies, the research team found that "Motor Vehicle Offices" were available. This information was then used to develop a comprehensive CMV agency list for all 50 U.S. states. Figure 2.1 shows the menu leading to all state agencies. An example of Alabama's state agency site is shown in Figure 2.2. The full list of motor vehicle agencies by state is shown within Appendix A.
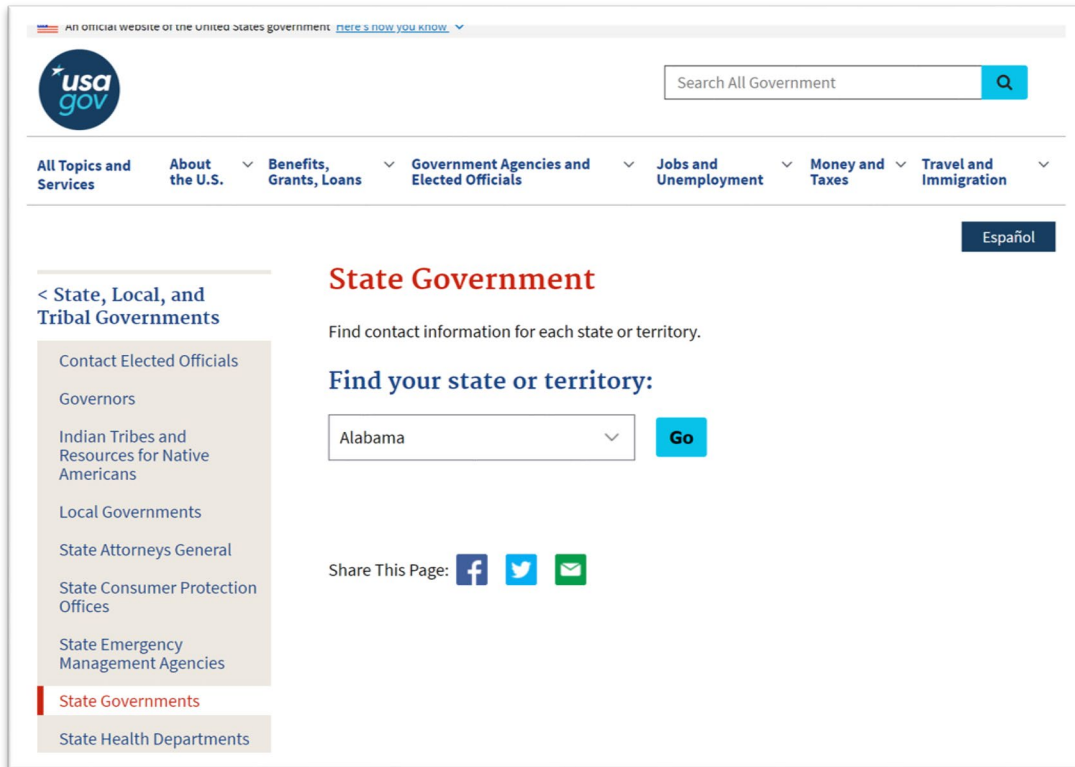
Figure 2.1 State Governments within USA.GOV
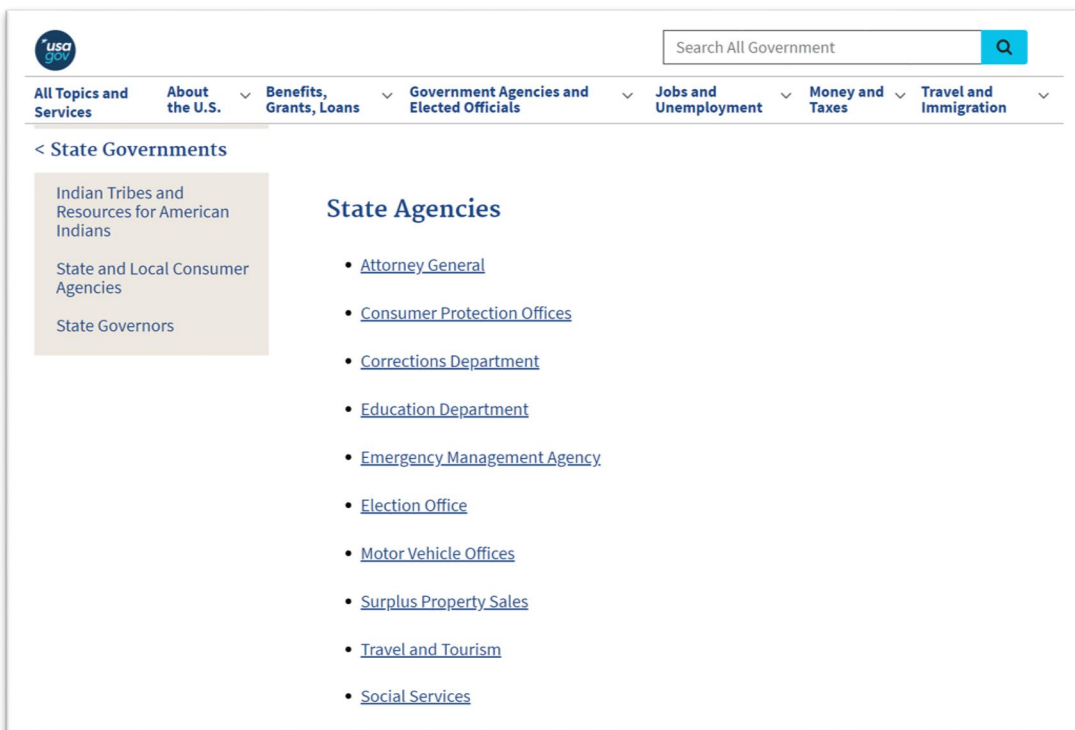
Figure 2.2 State Agencies within Alabama

2.2 State DOT Videos

Once all state CMV agencies were identified, the research team constructed a table listing all 50 of those agencies. Each website was verified to ensure that it was operable and connected appropriately with the state's CMV agency. The research team decided to select a random sample constituting 20 of the 50 states or 40 percent of the total population. They applied a random number generator to all 50 states to tag each state with a number. All 50 states were subsequently sorted from the highest randomly generated number to the lowest and the top 20 were selected for further examination. This procedure enabled any states identified with having videos to maintain their statistical validity across the entire dataset. Limiting the sample to 20 allowed the study to be conducted in a timely and resource-efficient manner (Table 2.1)

Table 2.1 Motor Vehicle Agency Sample by State

State	Motor Vehicle Website	Random	Rank
Louisiana	https://www.expresslane.org/	0.947637033	1
New Mexico	https://www.mvd.newmexico.gov/	0.938769781	2
Rhode Island	https://dmv.ri.gov/	0.931024051	3
Florida	https://www.flhsmv.gov/	0.916141837	4
Arkansas	https://www.dfa.arkansas.gov/motor-vehicle	0.908911809	5
Iowa	https://iowadot.gov/#services	0.896060531	6
Wisconsin	https://wisconsindot.gov/Pages/online-srvcs/external/dmv.aspx	0.894100885	7
Vermont	https://dmv.vermont.gov/	0.890195224	8
Colorado	https://dmv.colorado.gov/	0.862796056	9
Maine	https://www.maine.gov/sos/bmv/	0.85172393	10
Wyoming	https://www.dot.state.wy.us/driverservices	0.790920805	11
Washington	https://www.dol.wa.gov/	0.762356078	12
Utah	https://dmv.utah.gov/	0.757227601	13
South Dakota	https://dor.sd.gov/individuals/motor-vehicle/	0.750506664	14
Minnesota	https://onlineservices.dps.mn.gov/EServices/_/	0.724091325	15
Nevada	https://dmv.nv.com/	0.723814414	16
Kansas	https://www.ksrevenue.gov/dovindex.html	0.713478173	17
Ohio	https://www.bmv.ohio.gov/	0.708546262	18
Oklahoma	https://oklahoma.gov/dps.html	0.702946706	19
Georgia	https://dds.georgia.gov/	0.680877235	20

Sources (in sequential order): 4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23

Using this list, researchers navigated each corresponding agency website to identify any training resource offered to the public in the form of instructional videos. The team focused on those videos with CMV content. Four states had content that met the criteria: Iowa, Wisconsin, Colorado, and Maine.

These four states housed their CMV authority within different agencies. Iowa and Wisconsin assigned their CMV authority, including services and registration, through their respective departments of transportation. However, Colorado and Maine did not follow this model. Colorado used its Department of Revenue as the agency for CMV actions (e.g., Division of Motor Vehicles). Maine housed its Bureau of Motor Vehicles for CMV actions under its Department of the Secretary of State. While CMV authorities may be nested within different agencies by state, they typically perform similar functions and offer similar services for CMV customers. The research team found utility in videos provided by all four authorities on their websites.

Iowa DOT provided a webpage containing Q&A's on commercial driver's licenses (see Figure 2.3). The site lists who requires a CDL by prompting them with a few questions and describes the process on how to obtain it (see https://iowadot.gov/mvd/cdl/Commercial-drivers-licenses).[9] At the bottom of the site, Iowa shared a Nebraska DMV video providing CMV customers with instructions on performing CDL Pre-trip Inspections for their vehicles.
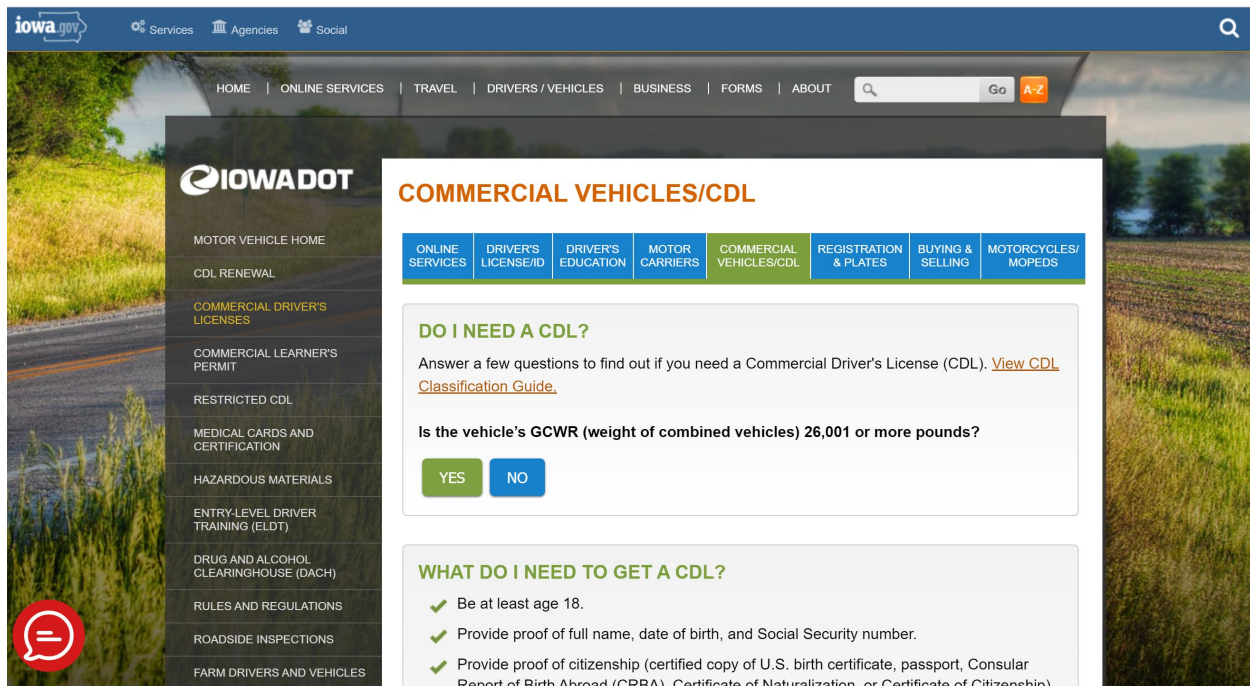
Figure 2.3 Iowa DOT Commercial Vehicle License Instructions

Wisconsin provided its customers with multiple "how-to" videos related to DMV actions (https://wisconsindot.gov/Pages/online-srvcs/other-servs/Howto.aspx).[10] These videos were not necessarily geared toward only CMV customers but nevertheless provided useful insights into tutorials for assisting customers with self-help actions. These videos can be seen in Figure 2.4.
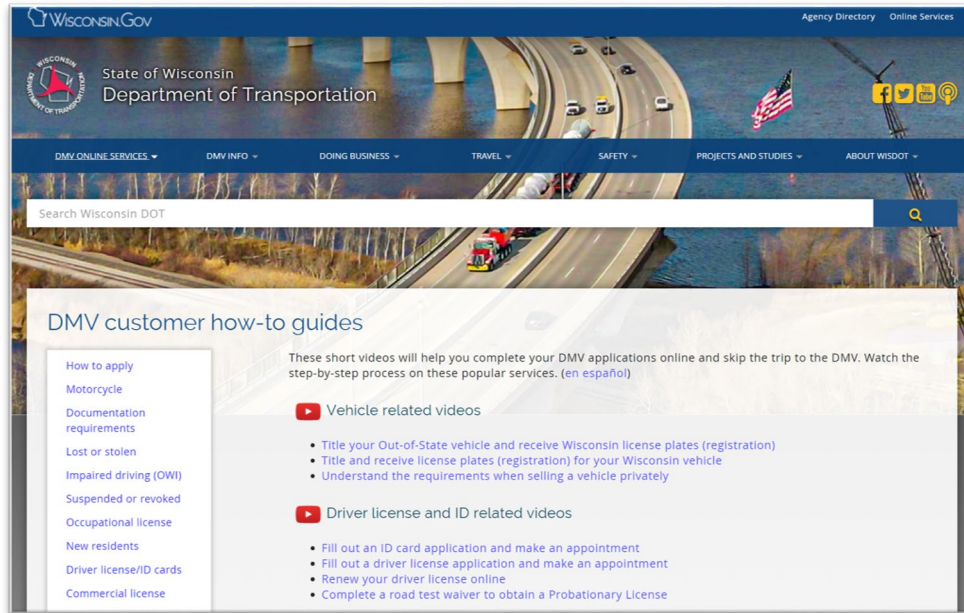
Figure 2.4 Wisconsin DOT "How-to" Videos

Colorado provided its customers with multiple video tutorials to assist them with performing routine vehicle actions (https://mydmv.colorado.gov/_/#1).[12] These videos covered topics such as applying for a driver's license, paying citations, and viewing or submitting medical certificates, among others. Colorado's page is shown in Figure 2.5.
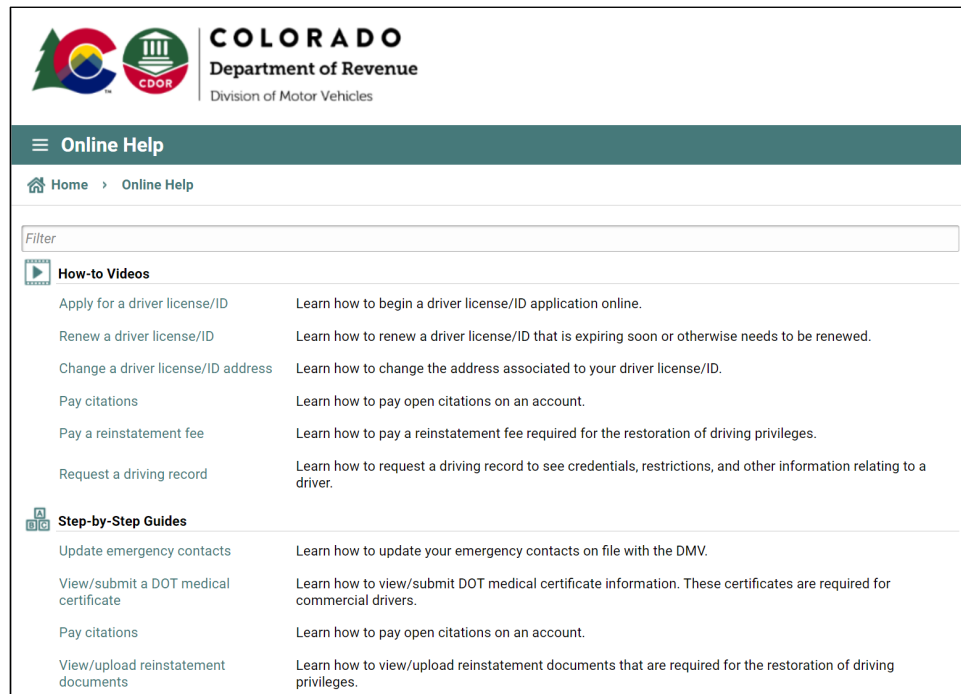
Figure 2.5 Colorado DOR Instructional Videos

Maine offered a series of "MoveME" videos and guides to assist its customers (https://www.movememaine.com/#).[13] One of the videos geared to CMV drivers focused on setting axle weights and spacings for CMV carriers. The full list of videos is shown in Figure 2.6.

Figure 2.6 Maine MoveME Videos

Chapter 3 Customer Service Data

3.1 Overview

KYTC's online Motor Carrier Portal provides motor carrier customers with the ability to fulfill their licensing and registration requirements and for paying the accompanying taxes and fees. In some instances, customers may encounter difficulty with understanding the full scope of their responsibilities and/or required payments. When this occurs, they will often call KYTC's customer assistance support to receive real-time technical support from trained KYTC Department of Vehicle Regulation staff. Customer service representatives log the details of each call into their customer service database by date, time, general subject, and other pertinent details. This web-based reporting database is the Transportation Enterprise Data (TED) warehouse powered by SAP's business intelligence and provides KYTC the ability to collect, extract, and transform data across its IT systems.[24]

The KTC research team requested a one-year dataset on calls received from motor carrier customers. Due to recent IT enterprise updates and interoperability challenges, KYTC was unable to provide the full year for motor carrier customer calls. However, KYTC successfully aggregated and provided 305,016 records associated with unique motor carrier customer calls occurring between June 13, 2021 and October 31, 2021. KTC examined this comprehensive dataset in two phases. The first phase involved using the statistical software package STATA to extract and analyze basic call-in themes across general subject areas. Key themes emerged from that analysis which formed the inputs into the follow-up analysis for the second phase. This second analysis further identified key trends and topics to address in the project's training videos. The methodologies, analyses, and results for both steps are described in further detail below.

3.2 Methodology for Original Dataset

The KTC research team used the software package STATA to perform its initial analysis on the KYTC dataset of customer service calls. STATA is a statistical software package that enables the user to analyze data and better understand patterns in trends and findings.[25] The first step involved loading the KYTC customer service data into STATA. The data was comprised of 34 distinct variables which covered the full range of customer call-in information such as the subject of the call, time of call, receiving KYTC section, KYTC agent information, and a detailed description of the issue or question, among other details. The full list of variables found in this motor carrier customer dataset (as logged into KYTC's TED system) is shown in Table 3.1.

Table 3.1 KYTC TED Variables for Customer Service Calls

FirstCall Resolution	SubjectSkill	AnsweredOnEscalation
IncidentNumber	ForceTransfer	EscalationCount
Resolution	AssignedbyKnowledge	Creation_Time
Source	DOT	Complete_Time
Subject	DirectTransfer	Queue_Time
Symptom	CanbeResolvedbyCSP	ServicePro
VIP	VoiceSkill	TruckingCo
CustomerType	TransferredbyCSP	ResolvedBy
ClerkType	WeighStationLocation	Resolving_Employee_Division
Section	WeighStationCall	Resolving_Employee_Branch
Branch	TransferType	Resolving_Employee_Section
Division		

While each variable is important, the research team was primarily interested in determining the specific issues and questions that comprised the majority of customer call volumes. The variable "SubjectSkill" most closely represented KYTC's mechanism for sorting issues and questions into specified categories. Consequently, the research team began the data extraction and analysis process by generating four distinct datasets from the original dataset. These four datasets corresponded to the four most common subject skill areas: IFTA/KIT/KYU, IRP, Permits and Licenses, and OW/OD. In each file, dummy variables were assigned to indicate whether the subject, symptom and/or resolution variables contained one or more of the following: KYU, IFTA, KIT, IRP, UCR, OW/OD, or closed due to abandoned logged incident. The first six categories represented those registration, licensing, and/or payment requirements for motor carrier customers, while the last "closed" categorization simply meant the call was closed out before it could be resolved.

Along with these clearly defined terms, the research team recognized that some caller questions may be logged into their respective categories of interest using an abbreviated, partial, or altered language slightly different from the original term. In other words, a customer service call would often be annotated with a description containing a permutation from one of the original existing six main categories (e.g., KYU, IFTA, KIT, IRP, UCR, and OW/OD). The research team accounted for this by developing multiple dummy variables describing the same term. This procedure increased the capture rate for characterizing the dataset. For example, OW/OD stands for overweight/over-dimensional but would often be described using other phrases. In this instance, dummy variables were also created for these permutations including overweight, overwidth, and overlength, among others. The STATA coding reflected these different permutations through various dummy variables which assisted in extracting relevant data.

Total dummy variables worked by counting the number of times a searched term (e.g., KYU, IFTA, etc.) appears in the subject, symptom, and/or resolution fields and subsequently generated those listings in the file's output. It is important to note that various combinations between variables (i.e., subjectskill, subject, symptom, and resolution) may have different interpretations. This particularly holds true for subjectskill topics that are more open ended such as KIT/IFTA/KYU and Permits and Licenses. For example, if the subject skill is KIT/IFTA/KYU and KYU=1, then this case most likely involves a call-in issue involving the KYU tax license. In another example, a KYU=1 value within the Permits and Licenses subjectskill dataset has a high probability that the caller is asking the KYTC agent about temporary or annual KYU permits. The research team discovered these distinctions in meanings across similar or identical terms while reviewing and analyzing the data. Finally, the "closed" incidents were defined with Closed=1 to indicate that

no action (i.e., resolution) was taken by the KYTC agent. Typically, the "closed" calls are those calls when the customer hangs up before speaking to an agent or during a call with an agent. In Appendix B, the full STATA code for this analysis is shown.

3.3 Initial Data Analysis
Data by KYTC Division
KYTC received and logged customer service calls from the general public across numerous subjects. Each call is directed toward the responsible department or section charged with handling that subject area. For the given data period, KYTC received 305,016 phone calls through its dedicated customer service line. However, the majority of received calls focused on passenger car driver licensing questions from the general public, not motor carrier customers. In fact, KYTC received over 180,000 phone calls on driver licensing alone (Table 3.2).

Table 3.2 KYTC Customer Service Call Frequencies by Division

KYTC Division	Frequency	Percent
Customer Service	18,352	6.0%
Driver Licensing	180,571	59.2%
Medical Review Board	6,328	2.1%
Motor Carriers	37,704	12.4%
Motor Vehicle Licensing	35,700	11.7%
Missing	26,361	8.6%
Total	305,016	100.0%

The research team focused only on those calls that pertained to motor carrier customers. This initial data extraction and analysis revealed that 37,704 distinct phone calls involved motor carrier customers. This cohort represented only about 12 percent of the overall customer service call volume received. However, motor carrier customer calls are typically more complex than the average driver licensing vehicle call due to the different rules and regulations pertaining to commercial motor vehicles. This often leads to more complicated and lengthy calls with KYTC customer service representatives. In Table 4, the total time by mean for all KYTC customer calls is shown. This table demonstrates that motor carrier customer calls represented around 16 percent of the total time for all KYTC calls. This time component is higher than the percentage of calls received (12.4 percent) shown for the motor carrier division in Table 3.3.

Table 3.3 KYTC Customer Service Call Durations by Division

Total Time by Mean (Frequency x Duration)				
Division	Seconds	Minutes	Hours	% of Total
Motor Carriers	29,170,449	486,174	8,103	16.1%
Customer Service	13,302,120	221,702	3,695	7.3%
Driver Licensing	109,115,096	1,818,585	30,310	60.1%
Medical Review Board	3,776,760	62,946	1,049	2.1%
Motor Vehicle Licensing	19,168,018	319,467	5,324	10.6%
Missing	7,105,260	118,421	1,974	3.9%
Total =	181,637,703	3,027,295	50,455	100.0%

Data by Subject Skill

KYTC customer service representatives assign each incoming motor carrier customer call to a subject skill, or category of interest, when received. The Division of Motor Carriers has 25 unique subject skills available to assign to these calls. The KTC research team extracted the motor carrier customer dataset and sorted out all of these subject skills to determine the frequency and duration of calls received. The top five subject skill categories listed for motor carrier customer calls included IFTA/KIT/KYU, IRP, Permits and Licenses, Missing, and OW/OD with those topics listed in descending order (i.e., IFTA/KIT/KYU is the highest frequency topic). In fact, these five categories dominated the overall motor carrier customer call volume with over 36 thousand calls or nearly 96 percent of the total call volume. Among these five, the research team made the decision to focus its analysis on the top three of IFTA/KIT/KYU, IRP, and Permits and Licenses. The fourth category, Missing, refers to those received calls that were closed due to caller hang-ups and therefore cannot convey any substantive meaning to this analysis. The fifth category, OW/OD, was considered but ultimately excluded from the analysis due to its much lower call volume than the other categories of interest. Even with these two removals, the subject skill topics of IFTA/KIT/KYU, IRP, and Permits and Licenses still comprised between 86 and 88 percent of the total time duration for calls received during this period when compared using mean and median total call times. The comprehensive list of motor carrier customer calls listed by subject skill is shown in Table 3.4.

Table 3.4 KYTC Customer Service Calls by Subject (Mean)

Motor Carrier Frequency & Duration (Mean) by Subject Skill				
Subject Skill	Frequency (F) of Calls	Seconds (S) per Call	Total Duration (F x S)	
			Seconds	Minutes
IFTA/KIT/KYU	15,208	1,161	17,656,990	294,283.2
IRP	7,266	1,154	8,386,810	139,780.2
Permits and Licenses	7,382	1,094	8,072,963	134,549.4
Missing	4,446	529	2,353,668	39,227.8
OW/OD	2,136	1,014	2,166,626	36,110.4
Passenger Carrier/Household Goods	540	785	423,868	7,064.5
UDI	466	693	322,827	5,380.5
Registration Program Assistance	116	1,389	161,124	2,685.4
Solid Waste	76	687	52,212	870.2
Inventory	17	1,705	28,985	483.1
Bond Desk	18	1,404	25,272	421.2
Insurance	8	1,605	12,840	214.0
Boat Titles	5	2,220	11,100	185.0
Rebuilt Title	5	1,830	9,150	152.5
Title Verification	3	1,950	5,850	97.5
Title	3	1,480	4,440	74.0
Title Status	1	2,700	2,700	45.0
Duplicate VIN	1	1,680	1,680	28.0
License (Non-CDL)	1	1,620	1,620	27.0
Reactivations	1	1,440	1,440	24.0
Online Renewal Fees	1	1,380	1,380	23.0
CDL	1	840	840	14.0
Archives	1		-	0.0
Fee Adjustments	1		-	0.0
Online Appointments	1		-	0.0
Total =		30,360	39,704,385	661,740

Source: See Footnote 24

The three top subject skill categories contained 29,856 unique records but many of those records lacked critical information. Some of the missing data fields included variables on (1) complete_time, (2) creation_time, (3) subject, and (4) symptom. These missing fields were crucial to help understand the detailed topics of discussion for customers, including their call-in topics. Missing fields also helped determine the time involved for customer service representatives responding to those calls. Consequently, the research team needed to remove this deficient data from the original dataset before conducting further analysis. This task was performed by sorting the data and removing those unique records that lacked one or more of these critical data fields. The removal of unique records with missing data in the three subject skills (IFTA/KIT/KYU, IRP, Permits and Licenses) for data quality resulted in 21,611 remaining records. Thus, the final amended dataset contained approximately 72 percent of the original data. The unique records that were reviewed, removed, and retained by subject skill are shown in Table 3.5.

Table 3.5 Amended Data Numbers by Subject Skill

Subject Skill	Unique Records (Calls)				
	Original Data	Removed Data	Percentage Removed	Amended Data	Percentage Available
IFTA/KIT/KYU	15,208	4,321	28%	10,887	72%
IRP	7,266	1,959	27%	5,307	73%
Permits and Licenses	7,382	1,965	27%	5,417	73%

3.4 Secondary Data Analysis

Data by Licensing & Registration / Tax Category

Two of the subject skill categories contained numerous licensing and registration/tax categories, including: DOT, IFTA, IRP, KIT, KYU, and UCR, among others. Understanding the data at this level of detail provides the greatest benefit to tailoring video topics for motor carrier customers. Therefore, the research team analyzed the three subject skill datasets and analyzed and sorted the data by licensing and registration/tax categories. As the name implies, the IRP dataset only contained IRP-centric data and this step was not needed. However, both the IFTA-KIT-KYU and Permits and Licenses datasets contained many competing topics. Using this approach, the frequency and duration of calls by subject skill was determined for each of the three datasets. This output is shown in Table 3.6.

Table 3.6 KYTC Customer Service Calls by Subject and Category

Subject Skill	Category (in Symptom)	Frequency of Calls (Number)	Duration of Calls (Seconds)	Duration of Calls (Minutes)	Duration of Calls (Hours)
IFTA/KIT/KYU	IFTA	1,140	948,778	15,813	264
IFTA/KIT/KYU	KIT	218	170,351	2,839	47
IFTA/KIT/KYU	KYU	5,705	4,044,785	67,413	1,124
IRP	IRP	5,307	2,710,273	45,171	753
Permits & Licenses	DOT	348	244,164	4,069	68
Permits & Licenses	IFTA	653	459,348	7,656	128
Permits & Licenses	IRP	119	87,218	1,454	24
Permits & Licenses	KIT	149	97,139	1,619	27
Permits & Licenses	KYU	1,890	1,304,696	21,745	362
Permits & Licenses	UCR	147	104,791	1,747	29

IFTA, KIT, and KYU categories show up in both the IFTA-KIT-KYU and Permits and Licenses datasets. This occurs because customer service representatives have the authority to assign incoming calls on topics into either subject skill. By consolidating this information across different datasets, the research team was able to determine the top categories driving call volumes and durations. The consolidated call list by category is in Table 3.7
.

Table 3.7 KYTC Customer Service Calls by Licensing & Registration/Tax Data

Category (in Symptom)	Frequency of Calls (Number)	Duration of Calls (Seconds)	Duration of Calls (Minutes)	Duration of Calls (Hours)
KYU	7,595	5,349,481	89,158	1,486
IRP	5,426	2,797,491	46,625	777
IFTA	1,793	1,408,126	23,469	391
KIT	367	267,490	4,458	74
DOT	348	244,164	4,069	68
UCR	147	104,791	1,747	29

This data analysis revealed that KYU and IRP calls constituted the overwhelming majority of motor carrier customer calls. In fact, the second largest category, IRP, more than doubled the frequency of calls received compared to the third-highest ranking for IFTA. Collectively, the combined KYU and IRP categories represented nearly 83 percent of the total calls by volume and 81 percent of the calls by duration (see Figures 3.1 and 3.2).
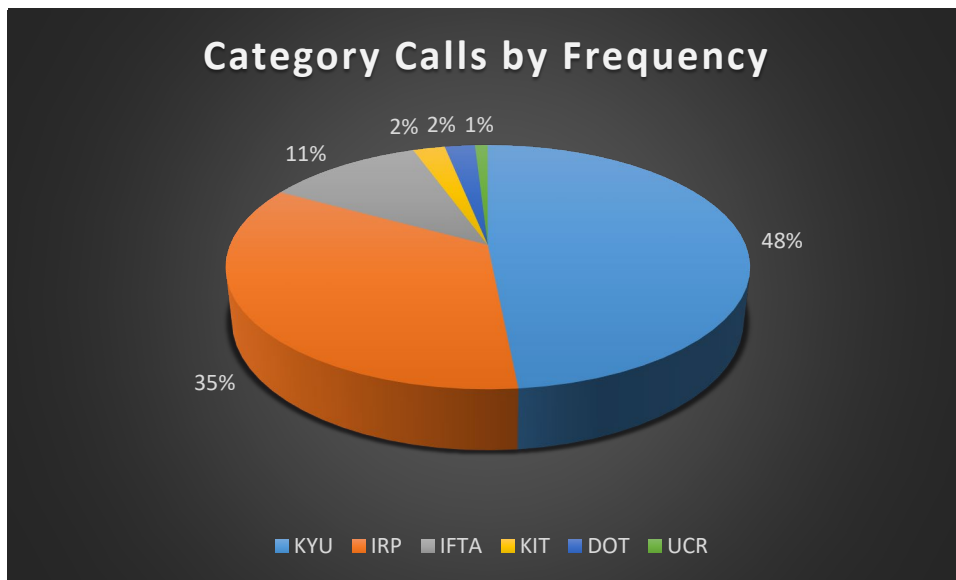
Figure 3.1 Frequency of Customer Service Calls, Percentage
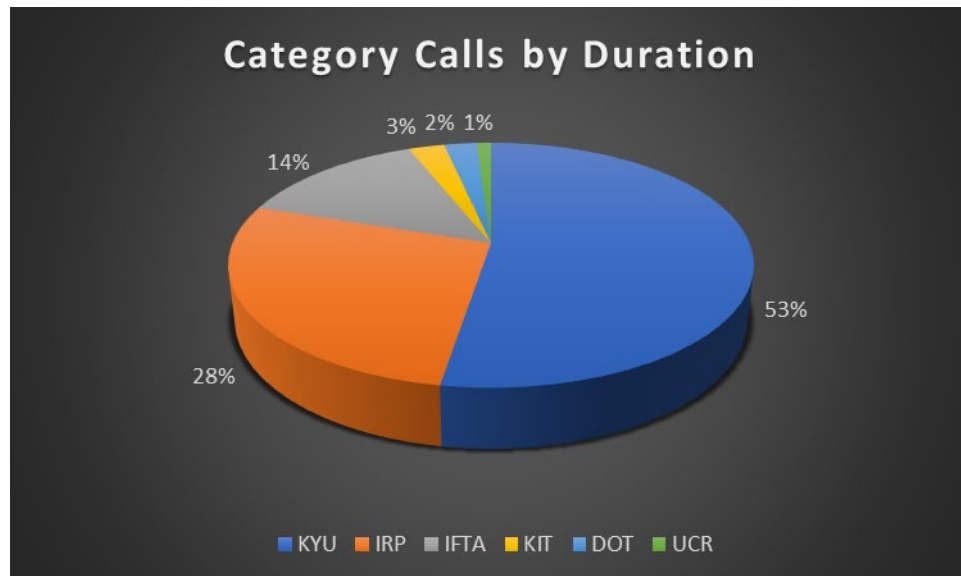
Figure 3.2 Duration of Customer Service Calls, Percentage

KTC coordinated with the project study advisory committee and showed them results from this analysis. Both parties agreed that video production efforts should focus on the KYU and IRP categories due to their significant call volumes and durations.

Variables of Interest for Analyzing Data

Once the two focus categories were determined, the research team reviewed and identified relevant variables to consider for the next step in the analysis. The variables were selected based on whether they characterized service calls and increased understanding of the nature of the call. The eight variables chosen to conduct this analysis helped researchers identify the topics driving call volumes and the durations of the calls. The eight TED variables of interest and their corresponding descriptions are:

- Incident Number – unique identifier corresponding to a given call
- Source – medium of communications exchange (e.g., phone)
- Subject – Assigned number category corresponding to a subject
- Symptom – Stated comment and/or question describing why the customer called in
- SubjectSkill – General category assigned to any given call (e.g., IFTA/KIT/KYU)
- Complete_Time – Assigned time when the call officially ends (i.e., hangs up or disconnects)
- Creation_Time – Assigned time when the call starts plus 30 seconds during which the caller is in interactive voice (IVR) protocol
- Queue_Time – Assigned time the caller is on hold following navigation through IVR protocols and awaiting pick-up from the customer service representative

To strengthen the analysis, researchers also developed two additional time-related variables, duration_time and field_time. The duration represents the time in minutes or seconds elapsed between the complete_time and creation_time variables. The field_time variable approximates the time the customer service representative is actively fielding the call (i.e., direct customer engagement). To begin the process, customers call into KYTC's customer service line and proceed through the initial IVR menu options. After 30 seconds, the KYTC system starts the official record documentation for that call. The field_time variable is indicated as such:

- Field_time = (complete_time – creation_time) – queue_time
- Field_time = duration_time – queue_time

The next step used these variables to determine the types of customer call-in questions. Initially, the research team scanned and reviewed the symptom category across each of the three datasets to identify recurring themes within the call-in topic descriptions. Each search revealed several recurring key words and/or phrases. Those key words and their derivatives were used to determine the frequency of certain call topics and their durations. The logic sequence used to identify those individual calls (and their corresponding key words) are discussed under each of the three subsequent sections on IFTA-KIT-KYU, IRP, and Permits and Licenses.

These dual sets of complementary factors, data variables, and key words formed the basis for analyzing all three KYTC datasets: IFTA/KIT/KYU, IRP, and Permits and Licenses. In each dataset, the research team identified the frequency of calls and amount of time dedicated to those calls corresponding to a given KYTC licensing and registration/tax category (e.g., KYU) and their related call-in key words/themes (e.g., reactivate). Furthermore, each dataset also contained irrelevant data requiring exclusion from further evaluation such as caller hang-ups. The most common one "closed due to abandoned logged incident" described when an incident number is initially created but does not reach a resolution. This scenario primarily occurs when a caller calls into the system and hangs up the phone while still in the IVR phase. The system automatically closes all "abandoned" calls after they stay in the system for 24 hours without receiving further updates. The second category "customer hang-up" most often occurs when a customer hangs up when being routed to another department and/or while on the phone with a KYTC customer representative.

IFTA-KIT-KYU Data

The original IFTA-KIT-KYU dataset contained 10,887 unique records. The first step in analyzing the data required eliminating irrelevant data stemming from the "closed due to abandoned logged incident" and "customer hang-up" categories. These two exact phrases appeared within the symptom category whenever a call was annotated as such. Collectively, those two categories represented 3,322 unique records or nearly 30 percent of the total call volume (see Table 3.8 and Figure 3.3). Once removed, the focus shifted toward the substantive calls with defined topics as found in the "various subjects and inquiries" designation.

Table 3.8 IFTA/KIT/KYU Call Type by Frequency and Duration

Call Type	Frequency	Duration (seconds)	Duration (minutes)	Duration (hours)
Various Subject and Inquiries	7,565	5,389,985	89,833	1,497
Closed Due to Abandoned Logged Incident	2,975	318,998	5,317	89
Customer Hang Up	347	69,020	1,150	19
Total	10,887	5,778,003	96,300	1,605
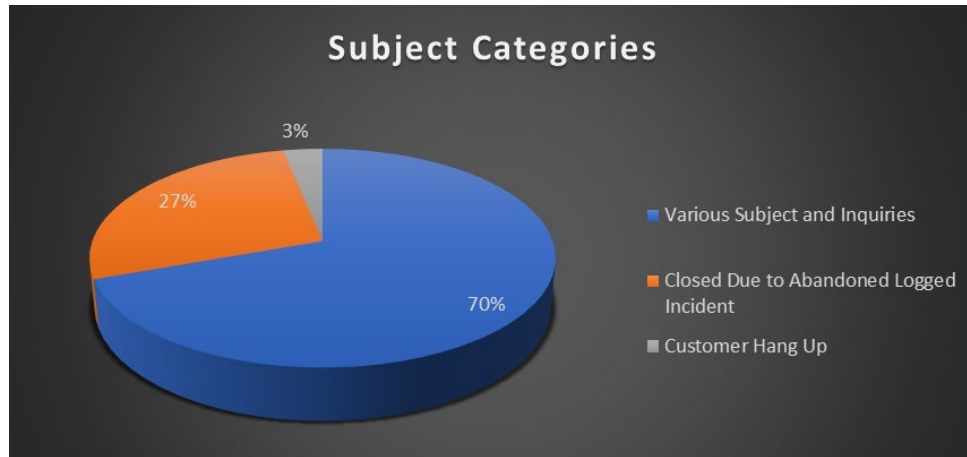
Figure 3.3 IFTA/KIT/KYU Call Types by Percentage

The research team reviewed the customer service representatives' comments on call-in topics within the symptoms header and noted several key words that appeared frequently. Those key words included reactivate, tax, letter, notice, filing, penalty, account, cancel, detained, status, and amend. Each key word corresponded to commonly encountered events from the commercial motor vehicle carrier industry. For example, the "reactivate" term was often used by callers that needed to reactivate one of their existing accounts, while the term "detained" was frequently associated with a driver that had been detained at roadside for lack of a registration and wanted to obtain a temporary permit.

Once key words were identified, a series of logic steps were developed to analyze and identify the frequencies, times, and themes corresponding to the licensing and registration/tax categories and their associated key words. The data was contained and analyzed within an Excel spreadsheet. The steps are described below.

1. Determined the field_time for a unique record if a given key word was found in the symptom category. Used formula =IF(ISNUMBER(SEARCH("ifta",$G10887)),$AX10887,"") for line 10887 where the G cell was the symptom category and the AX cell was the calculated field_time (duration_time – queue_time). In this case, "ifta" was the key word used for the search.
2. Determined the number of calls for a given key word search. If the previous step provided a positive value (>0), then the IF statement of =IF(AY10887<>"",1,0) would count the incident as occurring. The total number of calls meeting these criteria (i.e., finding a given key word) were summed at the bottom of the spreadsheet to derive a total frequency.
3. Steps #1 and #2 were performed for each of the predetermined key search words used in this analysis to determine the total number of calls and call durations for each.
4. Compiled and sorted out all key word data by frequency and duration into each of the four licensing and registration/tax categories. For example, the key word "tax" yielded four separate sets of results including (1) tax + ifta, (2) tax + kit, (3) tax + kyu, and (4) tax.

This cumulative process yielded key findings and results for both the licensing and registration/tax categories and key words/themes. The frequency and duration of calls in Table 8 demonstrate that the KYU category comprises the clear majority for both categories. In fact, KYU calls represent nearly 50 percent of logged calls by call frequency and nearly 66 percent of logged calls by call duration. The key word analysis also revealed notable trends among the prioritization of customer's needs and directed calls. The majority of calls listed the terms reactivate, tax, or account

to describe the reason for their calls. This illustrates that many callers are inquiring on how to reactivate their registration account and/or pay their corresponding taxes. In Appendix C, the full results for the key words and associated tax categories within this dataset are shown. Tables 3.9 and 3.10 on the next page show the full results of this analysis.

Table 3.9 Frequency and Duration of Calls for IFTA/KIT/KYU Data

Key Words	Search Terms	Category	Frequency of Calls (Number)	Duration of Calls (Seconds)	Duration of Calls (Minutes)	Duration of Calls (Hours)
IFTA	IFTA	IFTA	1,140	948,778	15,813	264
KIT	KIT	KIT	218	170,351	2,839	47
KYU	KYU	KYU	5,705	4,044,785	67,413	1,124
Other	Count if excludes above terms	Excluding IFTA, KIT, & KYU	4,276	984,692	16,412	274

Table 3.10 Frequency and Duration of IFTA/KIT/KYU Calls by Key Words

Key Words	Search Terms	Rank by Duration	Frequency of Calls (Number)	Duration of Calls (Seconds)	Duration of Calls (Minutes)	Duration of Calls (Hours)
Reactivate	activ	1	2,373	1,721,691	28,695	478
Tax	tax	2	1,958	1,423,336	23,722	395
Account	account	3	1,348	1,000,033	16,667	278
Filing	filing	4	485	386,549	6,442	107
Penalty	penalty	5	389	269,282	4,488	75
Letter	letter	6	268	211,929	3,532	59
Detained	detain	7	205	163,608	2,727	45
Cancel	cancel	8	218	158,929	2,649	44
Status	status	9	163	123,589	2,060	34
Amend	amend	10	128	93,277	1,555	26
Notice	notice	11	85	62,539	1,042	17

IRP Data

The IRP dataset was nearly half that of the IFTA-KIT-KYU dataset, at 5,307 unique records. Similar to before, researchers removed those "closed due to abandoned logged incident" and "customer hang-up" categories resulting in the removal of 1,832 records. The final list of unique records with substantive call-in topics for analysis (i.e., various subjects & inquiries) was 3,475 records (see Table 3.11) which comprised nearly 65 percent of all IRP calls by type (see Figure 3.4).

Table 3.11 IRP Call Type by Frequency and Duration

Call Type	Frequency	Duration (seconds)	Duration (minutes)
Various Subjects & Inquiries	3,475	2,442,390	40,707
Closed Due to Abandoned Logged Incident	1,678	230,786	3,846
Customer Hang Up	154	37,097	618
Total	5,307	2,710,273	45,171
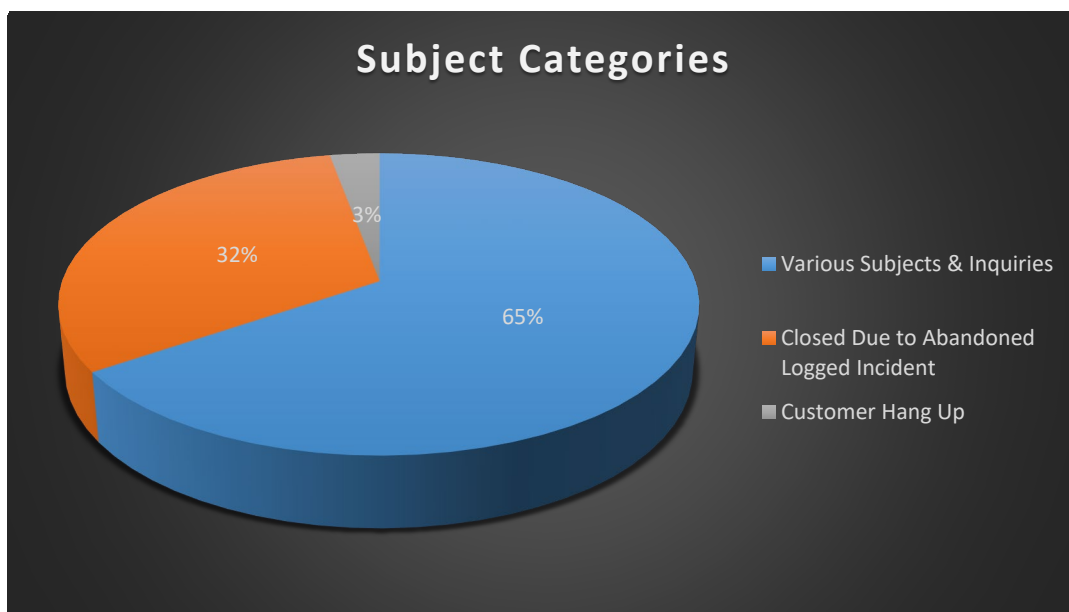
Figure 3.4 IRP Call Types by Percentage

The research team reviewed the IRP records for reoccurring words and themes to determine the most appropriate key words to use for search terms. This review ultimately found 17 key words found most often throughout the dataset. Those terms included apportion, plate, renew, cab card, decal, tag, sticker, check, status, verify, account, address, add, adding, remove, removing, and inventory. Some terms were analogous to one another such as "add" and "adding" and were placed together when conducting the analysis for identifying themes.

The logic sequence for searching and extracting those key terms within the dataset was developed next. These formulas used similar syntax to derive the required data collection from the Excel database. The data extraction procedures are shown below.

1. Determined the number of calls for a given key word within the symptom category. Used the formula of =COUNTIF(Data!$G$2:$G$5308,"*plate*") to count the number of cells that contain the word in asterisks for the Symptom category.
2. Determined the duration of calls for a given key word within the symptom category by determining the duration of the active calls (duration_seconds – queue_time). Used formula of:

=IF(ISNUMBER(SEARCH("apportion",$G2)),$AV2,"") to count the active call duration (seconds) if the word in asterisks is found within the symptom category.

3. Categorized similar key words together such as "check," "status," and "verify."
4. Calculated the percentages for both the call numbers and call durations across the different categories.

This process resulted in eight categories representing the original key word cohort. Motor carrier customers seeking IRP answers overwhelming called in about issues related to their IRP plate (or apportioned plate) and their account. These two categories represented approximately 51 percent of IRP call volume and 57 percent of IRP call duration. Other significant IRP issues with double-digit percentages included renew, cab card, add/remove, and check/status, among others. The final results for this IRP analysis are shown in Table 3.12.

Table 3.12 Frequency and Duration of IRP Calls by Key Words

Key Words by Subject (Symptom)	Number of Calls	Percent by Number	Rank by Number	Duration of Calls (s)	Percent by Duration	Rank by Duration
apportion, plate (2x)	973	28.0%	1	721,016	29.5%	1
account	803	23.1%	2	691,768	28.3%	2
renew	518	14.9%	3	412,650	16.9%	3
cab card	413	11.9%	4	288,185	11.8%	5
add, adding, remove, removing, inventory	362	10.4%	5	294,575	12.1%	4
check, status, verify (3x)	350	10.1%	6	239,221	9.8%	6
decal, tag, sticker (3x)	193	5.6%	7	126,239	5.2%	7
address	126	3.6%	8	107,689	4.4%	8

3.5 Summary of Data Analysis

The KTC research team collected and analyzed over 305,000 KYTC customer service records over a time period from June 13, 2021, through October 31, 2021. This database consists of customer calls received across all KYTC divisions. From this initial dataset, KTC sorted and extracted approximately 37,000 motor carrier customer calls directed toward the Division of Motor Carriers. Those motor carrier calls were further partitioned into similar categories by subject skill. The top three subject skills of IFTA-KIT-KYU, IRP, and Permits and Licenses constituted the vast majority of motor carrier calls.

With the exception of IRP, each subject skill could contain one or more licensing and registration/tax categories, the study's primary focus. The most common licensing and registration/tax categories for KYTC's motor carrier customer calls included KYU, IRP, IFTA, KIT, DOT, and UCR. The research team conducted a query search to identify those individual tax categories within the three individual subject skill datasets and sorted them out by call volumes and durations. This analysis revealed that the KYU and IRP categories ranked #1 and #2 in both the overall frequency of received calls as well as corresponding durations. In fact, the combination of these two categories exceeded the sum of the remaining four categories by a nearly four to one margin. Therefore, the research team identified these two categories as those most critical to assisting future motor carrier customers in potentially reducing future calls into KYTC's customer service. This decision formed the basis for developing additional questions used in interviewing KYTC customer service staff and determined the foundation for future findings and recommendations to the project's study advisory committee. The total number of calls and durations for each tax category are shown in Tables 3.13 and 3.14, and their corresponding percentages are shown in Figures 3.5 and 3.6.

Table 3.13 Tax Category Rank by Frequency

Category	Frequency (# of calls)	Rank
KYU	7,595	1
IRP	3,594	2
IFTA	1,793	3
KIT	367	4
DOT	348	5
UCR	147	6

Table 3.14 Tax Category Rank by Duration

Category	Duration (minutes)	Rank
KYU	89,158	1
IRP	42,160	2
IFTA	23,469	3
KIT	4,458	4
DOT	4,069	5
UCR	1,747	6
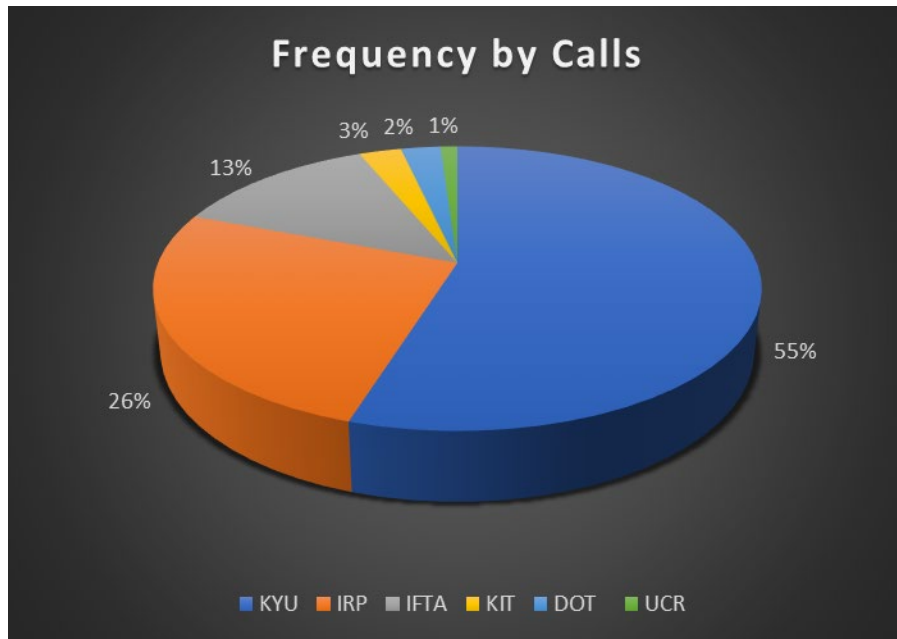
Figure 3.5 Tax Category Percentage by Frequency
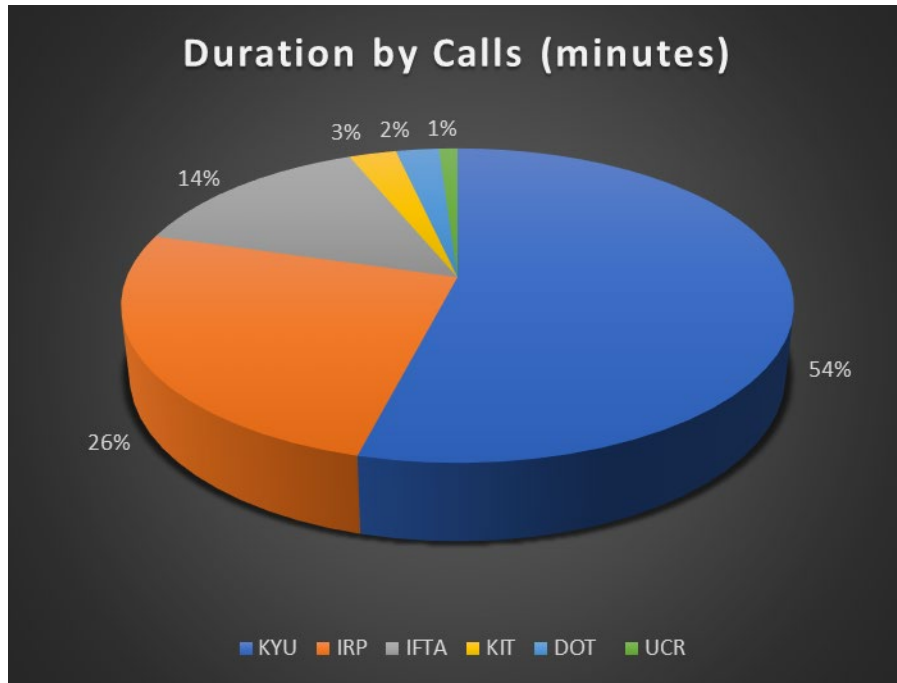
Figure 3.6 Tax Category Percentage by Duration

Once the priority tax categories were identified, the research team began its investigation into determining the topics and themes driving the majority of KYU and IRP focused calls. First, this process required an initial screening of customer service records to identify commonly recurring key words. Those key words frequently formed the basis for the customer's underlying questions and were used to categorize themes occurring across the KYU and IRP calls. For this dataset, most key words were distinct from others and would be used as the sole search parameter when performing queries on the data. In one case, however, there were multiple key words with similar meanings used by customers to describe the same overarching concept. This scenario applied to the key word reactivate. For example, motor carrier customers wishing to reactivate their KYU account could use the term "reactivate" or "inactive" to pose the same type of question which was subsequently logged into the system by the assigned customer service representative. In this case, the research team used a common derivative of both words "activ" when searching for these key terms. In both cases, the call still retained the same meaning and should be characterized as such. Using this approach, the top customer requests by key words for IFTA/KIT/KYU are shown in Table 3.15.

Table 3.15 Top Customer Requests by Key Words for IFTA/KIT/KYU

Key Words	Search Terms	Rank by Duration	Frequency of Calls (Number)	Duration of Calls (Minutes)
Reactivate	activ	1	2,373	28,695
Tax	tax	2	1,958	23,722
Account	account	3	1,348	16,667
Filing	filing	4	485	6,442
Penalty	penalty	5	389	4,488
Letter	letter	6	268	3,532
Detained	detain	7	205	2,727
Cancel	cancel	8	218	2,649
Status	status	9	163	2,060
Amend	amend	10	128	1,555
Notice	notice	11	85	1,042

The second data group, IRP calls, also relied on key words to identify themes but had more iterations of key words with similar meanings. Using a similar approach, the research team again scanned the initial IRP data to identify the most commonly used key words. Motor carrier customers commonly called in on an array of topics but in this dataset, multiple variations of key words could be used to describe the same overall theme. For instance, an IRP customer wanting to change the vehicles assigned to their fleet may indicate a need to add or remove vehicles or simply request to modify their existing fleet inventory. In any event, all three key words indicate a similar theme or need: to modify vehicles assigned to their fleet. Consequently, the research team assigned similar key words together that matched this approach. The results for identifying the top customer requests for IRP by key words are shown in Table 3.16.

Table 3.16 Top Customer Requests by Key Words for IRP

Key Words by Subject (Symptom)	Number of Calls	Percent by Number	Rank by Number	Duration of Calls (s)	Percent by Duration	Rank by Duration
apportion, plate (2x)	973	28.0%	1	721,016	29.5%	1
account	803	23.1%	2	691,768	28.3%	2
renew	518	14.9%	3	412,650	16.9%	3
cab card	413	11.9%	4	288,185	11.8%	5
add, adding, remove, removing, inventory	362	10.4%	5	294,575	12.1%	4
check, status, verify (3x)	350	10.1%	6	239,221	9.8%	6
decal, tag, sticker (3x)	193	5.6%	7	126,239	5.2%	7
address	126	3.6%	8	107,689	4.4%	8

Chapter 4 Customer Service Interviews

4.1 Methodology

The KTC research team interviewed KYTC customer service representatives to collect information about motor carrier customers that bypass online services and choose KYTC call-in services. The KYTC employees interviewed were those frequently engaging with motor carrier customers and were recommended by the project's study advisory committee. The research team used the data results generated during the customer service call data collection and analysis phase to frame the interview questions (see Chapter 3). The questions focused on validating the themes and trends seen from the data involving KYU, IRP, IFTA, KIT, DOT, and UCR calls that customer service representatives experienced. The goal of the interview process was to identify the common reasons for customer calls, determine time-consuming and high-priority caller themes, and gather feedback on the most value-added topics that could constitute the future instructional videos. Moreover, the interview process solicited advice from the staff on their recommendations for developing instructional videos.

The interviews took place with two groups of KYTC's Department of Vehicle Regulation staff. The first meeting occurred on March 21, 2022 with Division of Customer Service representatives. These personnel serve as the initial front-line representatives for motor carrier customer calls and commonly answer general topic questions on licensing and registration, including KYU. The second meeting occurred on April 14, 2022 with the One Stop Shop. These staff specialize in responding to certain motor carrier customer calls on complex topics including IRP licensing and registration requirements. The research team tailored interview questions to each group to best obtain the desired information. Upon completion of the interviews, the research team aggregated and analyzed common themes and trends for motor carrier customer calls.

4.2 Interviews with Division of Customer Service

The KTC research team conducted interviews with four customer service representatives from the Division of Customer Service.[26] This division is a direct report unit that falls under KYTC's Department of Vehicle Regulation within its agency organizational chart. Participants were asked for their responses on six general questions with more detailed, specialized questions listed under five of them. The original interview template for these interviews is shown in Appendix E. The following section provides the respondents' answers to the interviews.

Question #1

In coordinating with KYTC, we were able to obtain a CMV customer service call-in dataset for the period from June through October 2021. In this data, we identified six primary tax categories for CMV customer call-ins including KYU, IRP, IFTA, KIT, DOT, and UCR. Among these tax categories, what are your experiences with them by call volume and call duration?

a. For you personally, which of the provided categories are the two most common in terms of call frequency?

   •   All four respondents indicated that KYU calls were the highest and IRP calls were the second highest.

b. For you personally, which of the provided categories are the two most common in terms of call duration on average (i.e., two longest types)?

   •   Duration is not typically an issue because most specialty/complicated calls will get transferred over. Within two minutes of the call, we know whether or not we need to transfer someone over. Most of our calls are transferred to the Tax Branch for KYU, KIT, and IFTA, while others go to the IRP section. The UCR calls go to the Qualifications and Permits Branch but are low volume. Sometimes, a caller will ask DOT questions, but

in those cases will be referred to the website and phone for FMCSA as the responsible agency. Most transferred KYU calls typically involve the caller needing his account to be reactivated.

- KYU is the highest for us. Other topics, including IRP and IFTA, normally get transferred expeditiously. IRP is transferred to the IRP Branch, while IFTA may go to either Taxes or Credentials.
- KYU is the longest, and IRP is normally transferred over.
- KYU.

c. For your provided answers above, do your listed tax categories tend to be fairly uniform throughout the year or are they seasonal and spike during certain times of year? Please describe for each (as applicable).

- No response.
- The calls tend to increase at the end of each quarter.
- The calls are highest during the last month of each quarter (March, June, Sept, and Dec) corresponding to when quarter financial fees come due.
- The calls increase in the month immediately following the quarter such as April. This is because any motor carrier operators that have not paid their dues will receive a cancellation notice the following month resulting in their subsequent phone call to our office.

Question #2

For your category answers by call volume (see 1a above), what are the most common themes that you've noticed with respect to call-in questions? Some themes may include, but are not limited to, the following: reactivate account, check account status, update account, received a KYTC letter or notice, file a return, amend a return, detained vehicle, etc.

a. Please list two or more major themes and briefly describe your experiences involving those themes with respect to your first provided answer in 1a above (e.g., KYU, IRP, IFTA, KIT, DOT, or UCR).

- The top theme is reactivating a KYU number because the carrier needs to drive through Kentucky. They previously had a KYU account but let it lapse. The second major theme is detained where a driver calls in after having been detained by law enforcement at a weigh station or roadside. That detained driver needs to reactivate their expired registration and/or pay taxes (so routed to the KYTC tax section). The third major theme is detained but the carrier is requesting a temporary permit to drive through Kentucky.
- The top two themes involve drivers reactivating their KYU account and/or requesting assistance in filing/paying their KYU taxes. These calls usually come from out of state drivers that are planning on going through Kentucky. Another common call-in theme is a driver having difficulty logging into his/her account and requesting assistance. Those callers typically cite having an incorrect credential login after seeing a login error.
- The two major KYU call-in themes involve reactivating an account and driver detained. Oftentimes, a driver will pay their taxes past the deadline. In these cases, KYTC levies a penalty fee on that customer. The reactivation process will only be complete once the driver pays both his/her missed taxes and any associated penalty fees. The driver plans to come through Kentucky and calls into KYTC customer service to check on their status. In the detained category, a driver may be detained because the driver lacks a KYU permit or has an expired account.
- The highest occurring theme involves drivers calling in to reactivate their KYU account. Previously, the Division of Customer Service would transfer these callers over to the tax section to pay those delinquent amounts but now this process occurs extensively online. DCS customer service representatives often have

to help customers navigate the online portal in paying their back taxes and fees. The second major theme is applying for an initial KYU account. DCS customer service representatives can show the customer where to obtain the KYU application. However, if the customer requires assistance in filling it out, they would be transferred over to the qualifications and permits branch for additional assistance.

b. Please list two or more major themes and briefly describe your experiences involving those themes with respect to your second provided answer in 1a above (e.g., KYU, IRP, IFTA, KIT, DOT, or UCR).

- Motor carrier customers calling in with questions on IRP will typically ask to speak with the IRP section directly without presenting their question to DCS. When customers do ask questions, they will typically inquire on the status of their IRP apportioned plates (not yet received).
- IRP callers frequently ask about the status of their decals (i.e., apportioned plate).
- IRP callers usually either want to renew their apportioned plates or check the status on when they will receive their apportioned plates.
- For IRP, most customers want to check on their IRP application, status of their cab card, or the status of their apportioned plate. Only the IRP customer service representatives at our One Stop Shop can address these questions so we can transfer these calls. It would be beneficial for the Motor Carrier Portal to have a feature that allows IRP customers to check their own status on these items within KYTC.

Question #3

For your category answers by call duration (see 1b above), what are the most common themes that you've noticed with respect to call-in questions? See list of possible topics above.

a. Please list two or more major themes and briefly describe your experiences involving those themes with respect to your first provided answer in 1b above (e.g., KYU, IRP, IFTA, KIT, DOT, or UCR).

- Assisting customers with reactivating their KYU account typically takes the longest duration. These callers don't typically know that they have to pay their taxes first in order to get their account reactivated. A common reason that callers lose their KYU active status is that they did not file their KYU taxes even if they owe nothing because they did not travel through Kentucky during the preceding time period.
- Helping customers with applying initially for KYU accounts (not reactivating their account) typically takes the longest duration. In many of these cases, these calls involve first time operators conducting business in Kentucky. These calls are not necessarily common, but they do take the longest. Going forward, KYTC has started a new process for allowing customers to reactivate their KYU accounts. Before now, KYTC customer service representatives needed to transfer those customers over to the tax section to enable them to reactivate their account. Now, the KYTC portal has a feature that allows those same customers the ability to reactivate their KYU account on their own. Of course, KYU reactivation customers may still call into our office to assist them with their self-service, and this could potentially take a lot of time as well.
- The customer calls involving KYU have not typically taken that long. Often, those customers want to pay taxes and simply transfer them over to the tax section.
- Applying for an initial KYU account typically takes the longest amount of time.

b. Please list two or more major themes and briefly describe your experiences involving those themes with respect to your second provided answer in 1b above (e.g., KYU, IRP, IFTA, KIT, DOT, or UCR).

- All four respondents stated that long call durations do not really apply to IRP calls because they typically transfer those calls over to the IRP section within the One Stop Shop.

Question #4

This SPR project is focused on developing future online training/instructional videos for Motor Carrier Portal customers to better help them use the online services provided (and by extension, reduce the demands related to customer service questions).

a. From a Motor Carrier Portal perspective and generally speaking, are the questions that CMV customers call-in related to:
   i. A manual form submission?
   ii. Performing an online electronic process?
   iii. Finding additional information to resolve a question?
   iv. Something else? If yes, please describe.

- Reactivating a KYU account can be completed through several methods including filling in physical paperwork, submitting an online form, and/or paying taxes over the phone (after getting transferred over to tax section).
- Most customers do not use manually completed paperwork anymore. The topics involving ii and iii above are most applicable.
- Numerous customers have questions involving getting locked out of portal, forgetting their username and/or password, and/or other online processes related to the Motor Carrier Portal.
- Most questions involve electronic forms since that is how most people submit nowadays.

b. Based on the process listed above (4a, i-iv), which of those would offer the best opportunity to accomplish our goal in helping customers navigate the Motor Carrier Portal without resorting to a phone call?

- Three of the four respondents recommended a video for motor carrier customers showing them how to reactivate their KYU account, a common call-in topic. This will become increasingly important since the process has recently changed and now customers can reactivate themselves through an online self-service process. Any KYU reactivation instructional video should also discuss associated penalties for late/missed payments and how those factor into KYU reactivation.
- Other proposed topics mentioned include:
  - Allow customers to check the status of their IRP account online.
  - Provide instructional video for new customers applying for an initial KYU account.
  - Provide instructional video demonstrating how to add or delete a vehicle on KYU from an existing fleet.

Question #5

A few State Departments of Transportation have provided online training videos on their websites to assist their customers with navigating self-service features on their portals. These videos are often listed by individual training topic and feature a person navigating the website (along with voice and text descriptions of their actions).

a. Do you recommend a similar approach for this video?

- All four respondents concurred with this approach and think it would be beneficial for motor carrier customers.

b. If not, do you have other recommendations for a preferred video format?

- None of the four respondents had any additional preferences, insights, or recommendations on a prescribed video format.

c. Is there a video produced by another state DOT or government agency that you think is a good example of what KYTC should produce for DVR video tutorials?

- None of the four respondents had any additional examples or recommendations for other state DOT or government agencies regarding best practice videos.

Question #6
Are there are any other specific topics related to this project that were not covered and should be discussed?

- Other recommended topics include "How to reactivate KYU account?" and "How to files taxes for KYU and IFTA?"
- Nothing to add
- One recommended topic could include additional instructions on the cases when a motor carrier needs a KYU decal.
- Nothing to add

4.3 Interviews with One Stop Shop
The KTC research team conducted interviews with two customer service representatives from the One Stop Shop.[27] The One Stop Shop and IRP sections are both located within the Division of Motor Carriers and report to the Licensing & Registration Branch. These interviews primarily focused on IRP-related questions and themes. Normally, the IRP section receives most transferred calls on IRP matters from the Division of Customer Service representatives but due to staffing shortages, the One Stop Shop has recently received the bulk of IRP-related call transfers. The interviews consisted of four questions with two of them containing more detailed sub-questions below them. The original interview template for the One Stop Shop is shown in Appendix F. The following section provides the respondents' answers to their interviews.

Question #1
For IRP customer service calls, what are the most common themes that you've noticed with respect to call-in questions? Some themes may include, but are not limited to, the following: obtain an apportioned plate, renew IRP registration, check status of mailed plate/cab card/etc., add/delete a vehicle, etc.
a. Please list the two most common themes by call frequency (i.e., no. of calls) and briefly describe your experiences involving those themes.

- The most common theme is a customer not being able to login to his/her account. This is the case for both highest call volume and most time consuming. It is somewhat difficult to get logged in and the carriers have problems doing so. So rather than trying to do it themselves, they simply call into KYTC. Moreover, a lot of carrier customers do not have familiarity or a sufficient background working with computers. Oftentimes, they get messages saying their entered information does not match. This typically occurs because the tax identification number is different than when they first opened the account or they are trying to use a different email address (i.e., cannot have two emails unless someone creates a new user profile). Another common issue involves new customers inquiring on the status of their initial KYU application. In this

example, the customer emails their required application documents to KYTC but does not receive an automatic confirmation email that it was received. The customer then calls into KYTC to inquire that it was received and to find out the timeline for processing. KYTC officially has 10-14 days to respond to these initial KYU applications, but the current process is confusing for the customer. The third major call-in theme involves vehicle supplements where the customer wants to either add, delete, or exchange a vehicle within the business fleet.

- The two most common themes involve "Why was I rejected for a new account?" and "What are the requirements of IRP." For the former, many motor carrier customers have a language barrier because English is not their first language. Oftentimes, they either struggle to complete the form, or a form has been submitted on their behalf without their substantive input. The submitted forms are often impartially or incorrectly completed resulting in their rejection. For the latter, the IRP rules and procedures involving licensing and registration requirements are rather complex. It is difficult to educate carriers on IRP requirements and/or applicability to their own situations. IRP applications must have an active DOT number and DBA or FEIN, along with other requirements. The need for IRP registration has only increased since the pandemic as KYTC has seen a vast increase (50 percent or more) in individual truckers obtaining their own IRP plates as registrants, rather than previously through their carrier.

b. Please list the two most common themes by call duration (i.e., length of calls) and briefly describe your experiences involving those themes.

- KYTC has noticed a language barrier for many motor carrier customers attempting to login to the Motor Carrier Portal. In fact, nearly 75 percent of our carriers appear to be foreign-born with English as the second language (if at all). A customer calling into KYTC may have an interpreter on their end, but that interpreter most likely will still not understand transportation rules or procedures for licensing and registration, particularly with IRP. This circumstance hinders the effectiveness of the translation. Furthermore, the Explorer dashboard has language the customer may not understand when attempting their account renewals and/or vehicle supplement transactions. This dynamic pushes the customer to call into KYTC's customer service so they can inquire about the requirements and procedures. The Explorer dashboard offers a Help button for customers, but it is located at the very bottom and often missed by users. KYTC is working with Explorer (the vendor) to try and correct this.
- The two most common themes by call duration involve (1) gaining access to an existing account through login and (2) performing a supplemental transaction such as adding or deleting a vehicle. KYTC receives many calls from customers not being able to login to their account. In some cases, the customer has used a different email account to try and login to their KYTC account from the email they originally used to establish the account. An IRP account, for example, can only have a single email associated with it within our Motor Carrier Portal architecture.

Question #2

This SPR project is focused on developing future online training/instructional videos for Motor Carrier Portal customers to better help them use the online services provided (and by extension, reduce the demands related to customer service questions). A few State Departments of Transportation already provide online training videos on their websites to assist their customers with navigating self-service features on their portals. These videos are often listed by individual training topic and feature a person navigating the website (along with voice and text descriptions of their actions).

1. Do you recommend a similar approach for this video?

- Yes, using this approach would be very helpful.
- The key point to understand is that everyone has a different way to learn. Visual people tend to prefer video instructions. A video could be useful for educating customers. One thing to keep in mind when developing any videos is compatibility issues for different browsers. Some customers may use a desktop but many use smartphones for accessing the Motor Carrier Portal. This presents possible variations on the screen images they encounter. Also, different browsers may react differently to different screens. For example, KYTC has found that the Safari browser for an Apple iPhone is not compatible with the IRP site for the Motor Carrier Portal. For most cases, the Google Chrome browser tends to perform best for accessing the Motor Carrier Portal by smartphone.

2. If not, do you have other recommendations for a preferred video format?

- No other recommendations to offer.
- The first recommendation would be to provide additional training material using a PowerPoint slide deck or something similar on the Motor Carrier Portal to explain IRP's requirements and definitions. This documentation could supplement any instructional video involving IRP. A second recommendation should involve relocating the Help button on the Motor Carrier Portal to a different location that is more visible to the customer. It is often overlooked on the existing portal format. The button should be placed in a prominent position because many motor carrier customers are not proficient in using computers.

3. Is there a video produced by another state DOT or government agency that you think is a good example of what KYTC should produce for DVR video tutorials?

- Neither respondent offered any additional examples or recommendations for videos produced by other state DOTs or agencies.

Question #3

Based on our discussion and the project's goals, which training topics do you believe would offer the best opportunity to accomplish our goal in helping IRP customers navigate the Motor Carrier Portal without resorting to a phone call?

- The first video topic to address should be assisting customers with logging into the Motor Carrier Portal. This overall account login is necessary before the IRP and KYU logins. Any video on this topic should clearly list the sequential steps, describe them in detail, and provide additional instructions on what to do when errors are encountered. A second video topic could assist customers with navigating the Motor Carrier Portal's dashboard.
- The most important video would provide customers with IRP's requirements for needing an account along with instructions for applying for an initial account. A second video topic could provide customers with instructions for determining which motor carrier credentials they need for their operations such as KYU, IRP, IFTA, or others.

Question #4

Are there are any other specific topics related to this project that were not covered and should be discussed?

- Neither respondent offered any additional topics of interest that warranted coverage.

4.4 Summary of Interview Results

The second project phase involved conducting interviews with KYTC customer service representatives. KTC researchers interviewed four staff members in the Division of Customer Service and two staff members from the One Stop Shop. The first cohort of interviews focused on Division of Customer Service staff assigned to the Motor Carrier Branch. These customer service representatives are the first to respond to all incoming calls from motor carrier customers. They are well-versed on a wide array of general KYTC licensing and registration and tax topics and can satisfactorily answer most customer questions

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The KTC research team interviewed Motor Carrier Branch customer service representatives on their experiences involving motor carrier customers. This interview process primarily focused on identifying the most frequently occurring and time-consuming calls, topics or themes driving those calls, and the optimal video instructional method for serving customer needs. This first round of interviews revealed that all four respondents agreed that KYU and IRP calls were the highest and second highest calls by volume. These responses aligned with the initial data analysis from the customer service call database. All four respondents listed the topic of "reactivate KYU account" as a frequently occurring theme for call volumes. Two respondents also listed "reactivate KYU account" calls as excessively long, on average, contributing to the call duration category. Two other respondents listed customers calling about "initially applying for KYU account" as typically taking longer.

For IRP callers, all four respondents mentioned that customers regularly call-in inquiring about the status of their decals, cab card, or apportioned plate. The customer service representatives typically transfer these calls over to either the IRP or One Stop Shop sections within the Division of Motor Carriers. The remaining interview questions focused on delivery of content for future training videos. There was unanimous consent that providing instructional training videos to motor carrier customers on the Motor Carrier Portal would provide value to the customer and should help alleviate the frequency of future customer calls. Table 4.1 displays a summary of questions and corresponding responses for those interviews.

Table 4.1 Division of Customer Service Interview Summary

Interview Questions Number and Brief Description	Interview Participants (by Number) and Summary Responses			
	#1	#2	#3	#4
1a - Highest call-in category by call frequency?	KYU	KYU	KYU	KYU
1a - Second highest call-in category by call frequency?	IRP	IRP	IRP	IRP
1b - Highest call-in category by call duration?	NA	KYU	KYU	KYU
1b - Second highest call-in category by call duration?	NA	NA	NA	NA
1c - Calls uniform or season/periodic throughout year?	NA	End of quarter (Mar/Jun/Sept/Dec)	End of quarter	Beginning of quarter
2a - List two or more of the most common issues/themes by initial 1a response?	Reactivate KYU, driver detained, & temporary permit	Reactivate KYU, pay KYU taxes, & resolve login issues	Reactivate KYU & driver detained	Reactivate KYU & submit initial KYU application
2b - List two or more of the most common issues/themes by second 1a response?	Speak with IRP agent & check status of apportioned plate	Check status of IRP decals	Renew or check status of apportioned plate	Check status of their application, cab car, or apportioned plate
3a - List two or more of the most common issues/themes by initial 1b response?	Reactivate KYU account	Apply initially for KYU account & reactivate KYU account	NA	Applying initially for KYU account
3b - List two or more of the most common issues/themes by second 1b response?	NA	NA	NA	NA
4a - Are most questions related to manual submission, online submission, or finding other information?	Can be any of those methods	Primarily online submission or finding information	Primarily login issues with username & password	Primarily involve electronic forms
4b - Which instructional methods present best method to facilitate a customer's self-service rather than call?	Reactivate a KYU account	Reactivate a KYU account and check IRP status online	Reactivate KYU account	Apply initially for KYU account and add or delete a KYU vehicle
5a - Do you agree with an instructional video approach for this project?	Yes	Yes	Yes	Yes
5b - Do you have another favored instructional method for this project?	No other recommendations	No other recommendations	No other recommendations	No other recommendations
5c - Do you have any best-practice videos offered by other agencies that should be reviewed for this project?	No	No	No	No
6 - Do you have any other topics not covered in interview that should be considered for instructional videos?	Reactivate KYU account and file taxes with KYU & IFTA	No	Illustrate use case for needing a KYU decal	No

The second round of interviews focused on IRP calls forwarded to the One Stop Shop. Respondents informed the research team that IRP calls are more complex and specialized than other tax categories, including KYU, and often involve a more detailed explanation to the customer. The responses for the top two categories by call frequency and call duration varied between the respondents. The first respondent indicated that the highest and second highest call categories by frequency were (1) issues with account login and (2) check status of initial IRP application, while

the top two for call duration were (1) customers difficulty with English and (2) understanding IRP requirements. The second respondent listed the highest and second highest call categories by frequency as (1) request reason for IRP rejection and (2) understanding IRP requirements, while the top two for call duration were (1) account login issues and (2) performing supplemental transactions. The common thread across these responses involved customers having difficulty with account login and not understanding the requirements for needing an IRP account.

Both respondents agreed that instructional videos would be beneficial for assisting customers and helping to reduce customer call-in volume. One respondent also mentioned that any instructional videos should account for differences in learning styles and possible browser variations. For instance, the current Apple Safari browser is not currently compatible with the Motor Carrier Portal. Neither respondent had any specific advice for the videos nor could point to other best-practice instructional videos offered by other agencies on this topic. When asked about recommended training topics, the two respondents recommended topics on (1) assisting customers with both KYU and IRP account login, (2) improve the Motor Carrier Portal dashboard, and (3) detail the requirements for an IRP and other related accounts such as KYU. The complete summarized list of questions and corresponding responses are listed in Table 4.2.

Table 4.2 One Stop Shop Interview Summary

| Interview Questions Number and Brief Description	Interview Participants (by Number) and Summary Responses	
	#1	**#2**
1a - Highest call-in category by call frequency?	Issues with account login	Find out reason for rejection of new IRP account
1a - Second highest call-in category by call frequency?	Check status of initial IRP application	Find out the requirements for needing an IRP account
1b - Highest call-in category by call duration?	Many motor carriers speak English as a second language and have language barrier challenges	Issues with account login
1b - Second highest call-in category by call duration?	Find out what is required for an IRP account and list why because carriers cannot understand via the dashboard	Find out how to perform a supplemental transaction (vehicle add/delete, plate exchange, etc.)
2a - Do you agree with an instructional video approach for this project?	Yes	Yes, but should account for different learning styles and browser differences for customer experience (e.g., Safari on Apple not compatible with site)
2b - If not, do you have other recommendations for a preferred video format?	No	It may be helpful to add a training brief (PPT) detailing IRP requirements and definitions to the Motor Carrier Portal
2c - Do you have any best-practice videos offered by other agencies that should be reviewed for this project?	No	No
3 - Which training topics do you believe would offer the best opportunity to assist IRP customers with navigating the Motor Carrier Portal without resorting to a phone call?	Provide instructions on both IRP and KYU account login and identify future improvements to the dashboard	Provide instructions detailing when a carrier needs an IRP account and/or other accounts such as KYU
4 - Are there any other specific topics related to this project that were not covered and should be discussed?	No	No

Chapter 5 Training Videos

5.1 Selection of Video Topics

The KTC research team analyzed the results from the customer service call-in data and completed interviews to identify common themes with motor carrier customer calls. The two main topics for motor carrier customers primarily involved questions with KYU and IRP. Once motor carrier customers reached a representative, there were recurring themes in the calls. For KYU, customer representatives often assisted customers in applying for an initial KYU account or reactivating an existing one that had expired. This theme was the primary driver behind both frequency and duration of calls. The One Stop Shop customer service representatives typically responsible for IRP customers often found that many customers did not understand the requirements associated with IRP credentials. To a slightly lesser degree, many customers also called in requesting assistance with logging into their IRP account. KTC met with the KYTC study advisory committee on April 20, 2022, to share these initial findings. The committee members discussed the range of topics investigated across the data analysis and interviews and formulated their thoughts on developing instructional training videos. The top three topics identified as the highest priority by the committee included (1) understanding IRP requirements and signing up for an IRP account, (2) creating a KYU account, and (3) reactivating a KYU account. Furthermore, the committee decided to merge two distinct, yet related, IRP themes involving account creation and requirements into a single, comprehensive video. These video deliverables were named as follows:

- Video #1 – IRP Account Creation
- Video #2 – KYU Account Creation
- Video #3 – KYU Account Reactivation

Additionally, motor carrier customers tend to have difficulty with logging into their accounts, particularly those with IRP accounts. However before doing so, each customer must first log into the Motor Carrier Portal using a single sign on through the Kentucky Online Gateway (KOG). This initial step allows them to subsequently login to their individual accounts including IRP. Therefore, the study advisory committee decided that an instructional video on "single sign on and KYTC account" would be highly beneficial. KTC initially planned to develop this topic as an additional video deliverable but during the course of this project discovered that this video topic already existed on KYTC's website. Other KYTC officials had hired an external consultant to develop the video "How to Create a KOG Account" and posted it on their KOG website help page at https://kog.chfs.ky.gov/public/Help. This instructional video is found at the following URL: https://kog.chfs.ky.gov/public/Content/images/KOG_v6.mp4. The committee subsequently agreed that KTC no longer needed to develop a video for accessing single sign on with the Kentucky Online Gateway (KOG). The screenshots for accessing this video URL and the portal for the KOG single sign on page are shown in Figures 5.1 and 5.2.
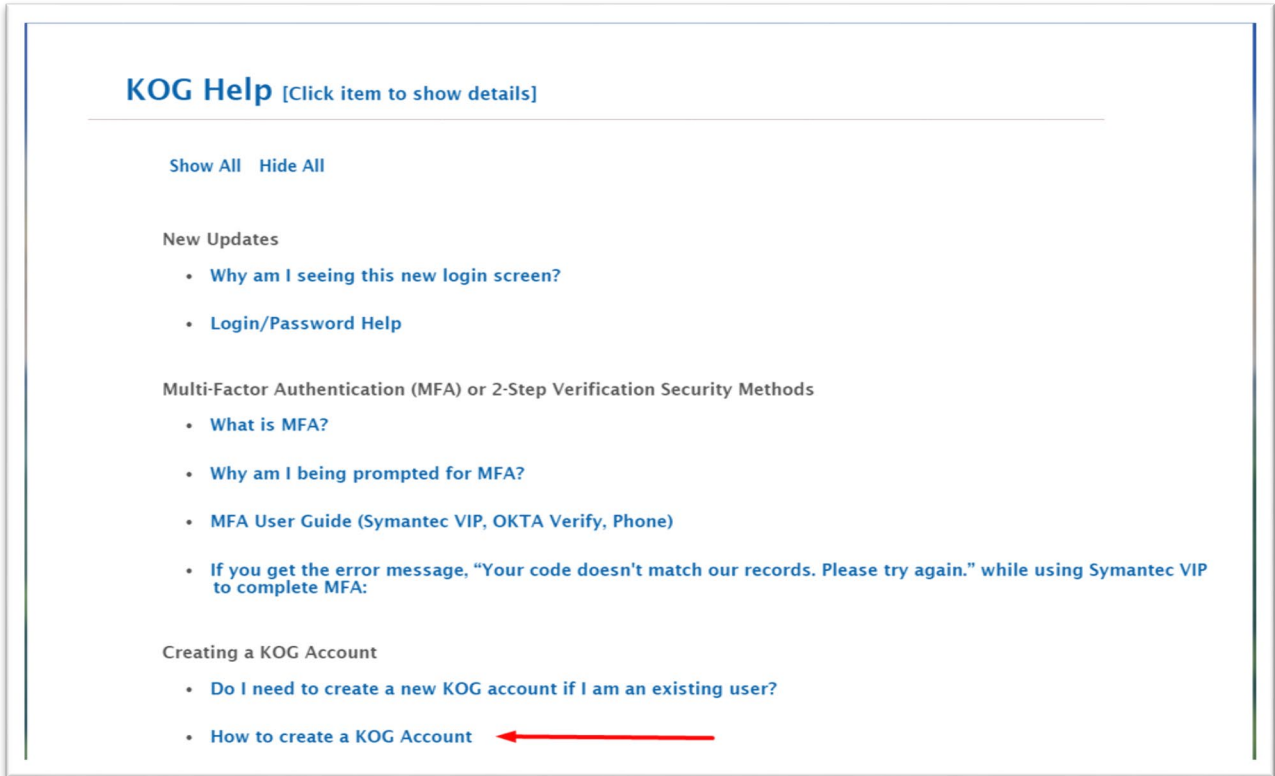
Figure 5.1 KOG Video URL Link
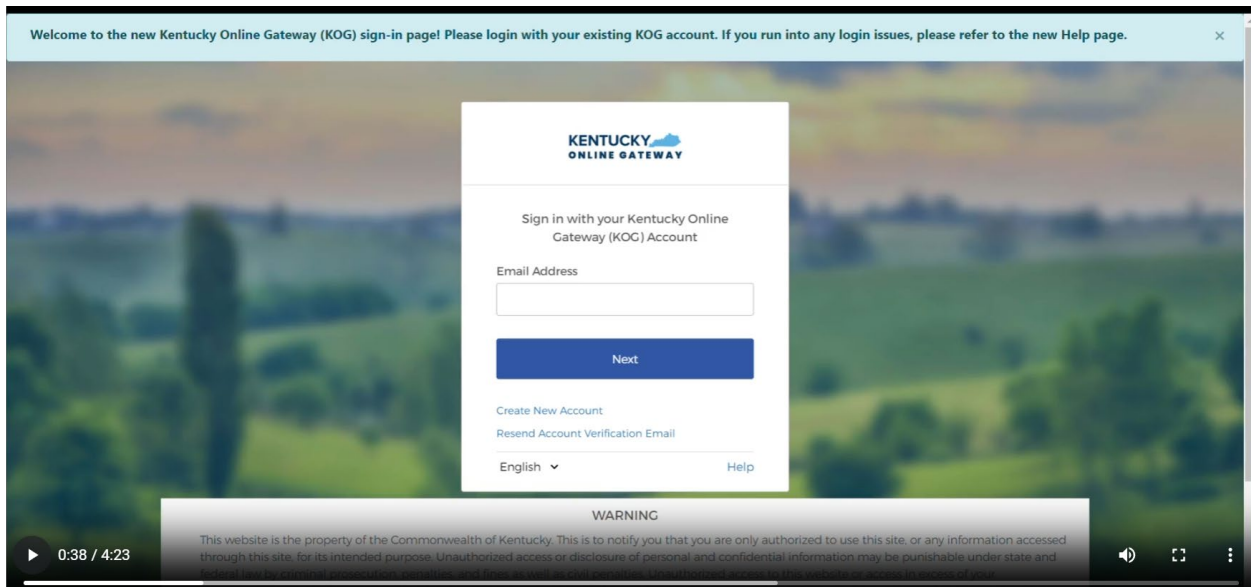
Figure 5.2 Kentucky Online Gateway (KOG) Portal

5.2 Development of Training Videos
Content Development

The KTC content developer took the lead in developing the training videos but used a collaborative process with other KTC team members and the KYTC study advisory committee chair to finalize them. Using the identified training

topics, the initial step involved using the KYTC Kentucky Online Gateway platform and associated modules to develop a better understanding of the steps needed for motor carrier customers to successfully navigate the portal. This process yielded a series of screenshots and sequential notes as the foundation for the transcripts and videos. The KTC content developer drafted each transcript and shared it with other KTC project members for input before submitting to the committee chair for final approval. Once a transcript was approved, KTC could proceed with developing the accompanying video for that transcript.

The video development process relied on multiple software applications and platforms for content development. Audio development constituted the first phase in the video development process. Using a professional microphone, the content developer captured the audio recording of the approved transcript through Adobe Audition. Volume was equalized, plosive aspirations removed, and tracks adjusted for timing. Next, an accompanying music track was selected from MotionArray.com. Music tracks needed to seamlessly blend into the background for the voice-over while simultaneously providing an "upbeat' and "corporate" sound. The final audio step involved timing the music tracks and shifting the pitch to sync with the voiceover length.

Video graphics development represented the second phase. Motion background graphics were selected and sourced through the KYTC Motor Carrier Portal with supplemental stock footage provided via MotionArray.com or MisterHorse.com. The Motor Carrier Portal footage included both still frames and original video capture (using the Windows Video Capture tool). Video visuals and color schemes were selected to match and complement the accompanying audio and maximize both customer engagement and understanding. Still graphics were processed through Adobe Audition, while video content was primarily edited using Adobe Premiere. Lastly, Adobe Media Encoder rendered the generated videos with an h.264 encoding method best suited for online video while maintaining 1080p high-resolution video quality.

KTC used a consistent chronological format in walking customers through easy-to-follow video instructions. Each video began with a brief description of the identified topic before launching into a series of detailed instructions to assist the motor carrier customer with completing the self-described task. Synchronized and engaging visuals and audios reinforced learning. The three individual transcripts associated with each video deliverable are shown in the following three sections. In addition, screenshots for each video topic are displayed in Figures 5.3 – 5.5.
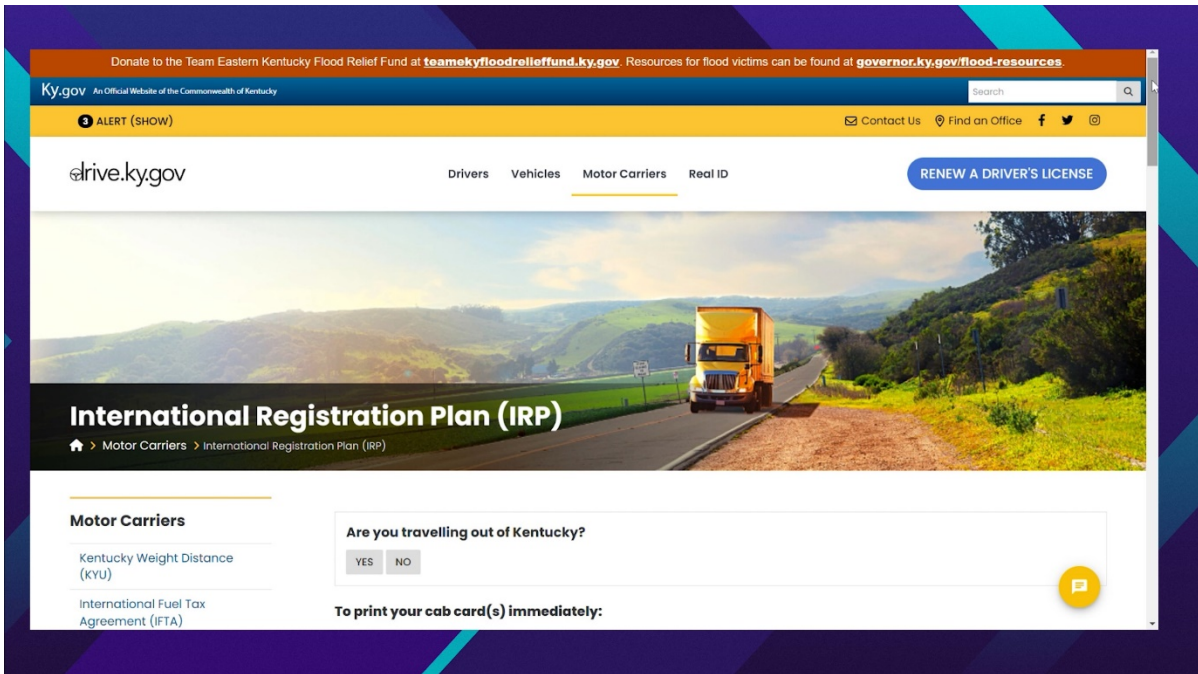
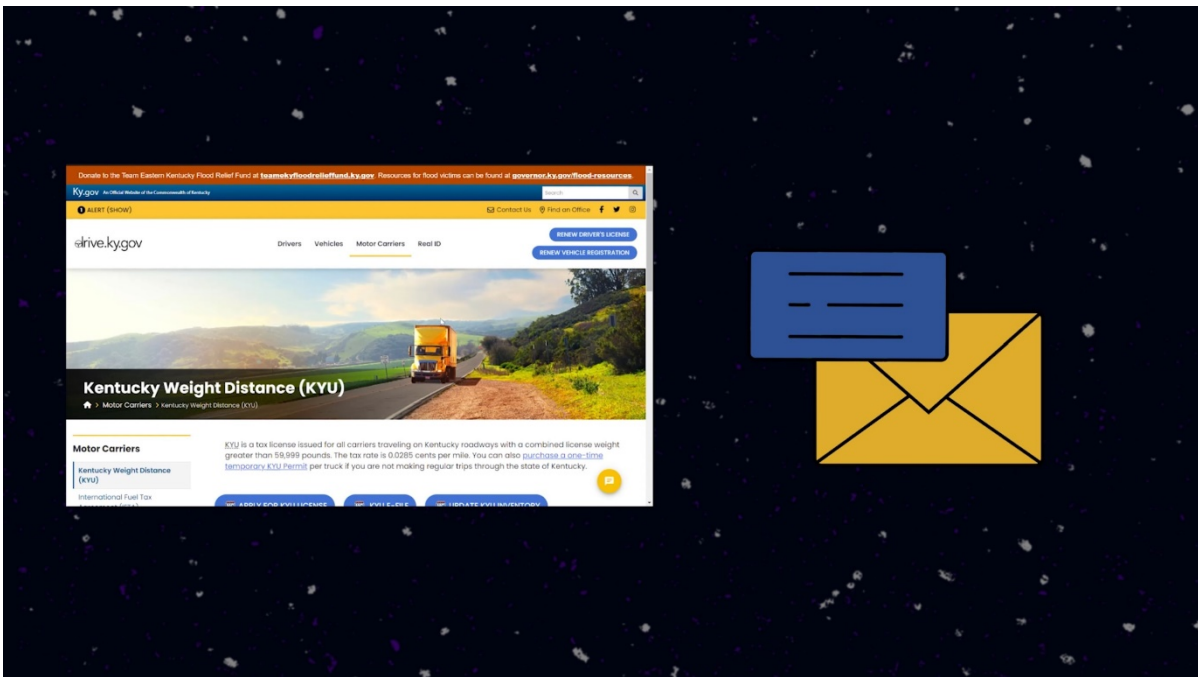**Figure 5.3** IRP Account Creation Video Screenshot

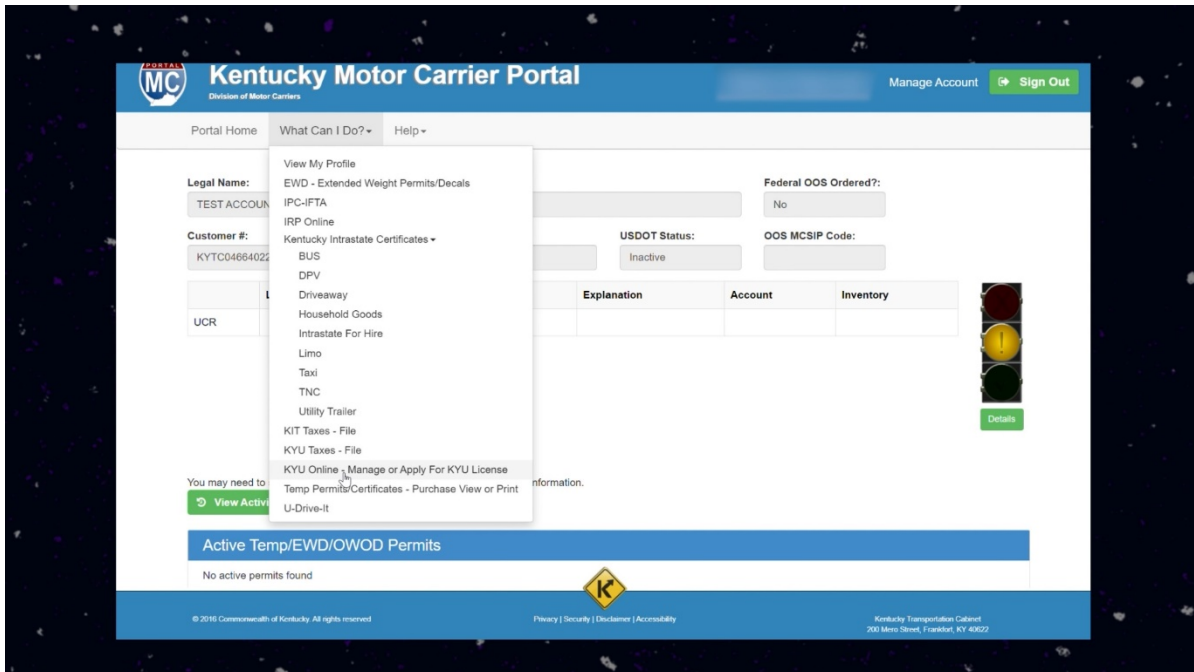**Figure 5.4** KYU Account Creation Video Screenshot

Figure 5.5 KYU Account Reactivation Video Screenshot

Video Transcript #1 – IRP Account Creation

The International Registration Plan, or IRP, is an agreement among the United States and Canadian Provinces that allows commercial motor vehicle operators to register with a single jurisdiction rather than every jurisdiction through which they may travel. This agreement has helped simplify compliance while still allowing for the free movement of goods and services across jurisdictional borders.

Account creation isn't difficult, but there are several steps you'll need to complete. Failure to supply all the information at the time you submit for an account could result in the need to submit everything again. So, in today's video, we will walk you through the process of creating an initial IRP account with the Kentucky Transportation Cabinet and provide you with the information that you need to get your IRP account created and avoid delays.

In this instruction, we will walk you through registering for a new IRP account within the Kentucky Transportation Cabinet's Motor Carrier Portal. This video will only last a few minutes but should help you better understand these required steps.

- IRP Accounts must be created by KYTC. There's a page set up on Drive.Ky.gov to help you gather all of the information that you'll need.
- To begin, first you'll need to visit drive.ky.gov/motor-carriers
- On this page, click on "IRP"

- Scroll down the page and click " NEW IRP ACCOUNT"
- This will show the IRP Account Requirements.

You will need to collect the listed documents and submit them all together to the IRP Office in Frankfort. If you have missing or incorrect information, your submission may be rejected and you'll need to start the process over, so please take your time and ensure that you have everything accurate and complete before submitting. Let's take a look at everything that you'll need.

1. You will need a completed Schedule C Application listing your new account information and vehicle information. The principal owner of the company will need to provide proof of ownership of the company. The Schedule C application is available through the link on this page. It can also be found on the Motor Carrier Forms Library on drive.ky.gov.

2. You will also need a completed Schedule B – Kentucky IRP Apportioned Registration Application, which can also be found on the link on this page and is also available through the Motor Carrier Forms Library.

3. If you are operating under another carrier's USDOT number, you will also need a completed Operational Lease Agreement which must be signed by both parties. You may be subject to a citation if you do not notify your base state and receive an updated cab card. The Operational Lease Agreement Form TC 95-64 is linked on this same page.

4. You'll also need an Apportioned Certificate for each vehicle from your County Clerk's Office. You must apply for a title and obtain a certificate before filing for IRP. To find your County Clerk's Office information, you may visit KentuckyCountyClerks.com.

5. If you have a vehicle that is 55,000 pounds combined gross weight or over, for the current tax period which has been owned for 60 days or more, you will need to fill out Form HVUT 2290 (issued by the IRS). The HVUT 2290 is a federal tax paid to the IRS and can be paid online or at the IRS office. Kentucky must verify that the tax has been paid by receiving a paid copy of the HVUT 2290 Schedule 1, including all the VINs on the required vehicles. Form HVUT 2290 is linked on the Drive.ky.gov Motor Carrier page.

6. Lastly you will need three forms of proof of Kentucky physical address. Examples are copies of Kentucky vehicle titles, filed income tax returns, phone or utility bills. All proofs must match the name and physical address on the account. P.O. Box address proofs are not acceptable.

Once you have the appropriate documentation together, there are four ways you may submit these documents. You can email them to KYTCIRPApportionedRegistration@ky.gov or you can fax them to 502-564-2950. You can also mail or deliver the documents in person to the IRP Section at 200 Mero Street in Frankfort. If you have any questions, you can contact our call center by dialing 502-564-1257. Ask for the IRP section.

Video Transcript #2 – KYU Account Creation
KYU is a tax license issued for all carriers traveling on Kentucky roadways with a combined license weight greater than 59,999 pounds. The tax rate is 0.0285 cents per mile. You can also purchase a one-time temporary KYU Permit per truck that is good for 10 days if you are not making regular trips through the state of Kentucky.

A KYU number may be obtained electronically or through the mail. If you prefer to get it through the mail, you can print and mail in a completed Kentucky Trucking Application Form (TC 95-1) from the Motor Carriers webpage on drive.ky.gov. The paper application can take 10-14 business days to process, and you will only receive a KYU number after processing. Incomplete applications will be returned. (https://drive.ky.gov/Motor-Carriers/Pages/KYU.aspx) The online process is faster. KYU Numbers are issued immediately upon completion of the online KYU Application. You must set up a Kentucky Online Gateway or KOG account before applying for a KYU number electronically. The State of Kentucky uses KOG for website security. KOG provides single sign-on access to services within the Commonwealth. To get started, go to https://apps.transportation.ky.gov/MotorCarrierPortal/.

If you have registered for an account before, enter the same email address you previously used to access the Kentucky Online Gateway. If you can't remember your password, don't set up another account. Click next and then click on "Forgot password?" at the bottom of the page. If you do not have a Kentucky Online Gateway account, click "Create New Account."

Here you will see a page asking for information to create your Kentucky Online Gateway Profile. Fields with a red asterisk are required, but it's good practice to furnish as much information as possible. When you've entered all the information, click the "Sign Up" button at the bottom of the page.

You will be redirected to a page asking to verify your email. You have just four hours to complete this step. Check the email account that you used to sign up and look for an email from KOG_DoNotReply@ky.gov. If you don't get the email in your inbox, check your spam or junk mail folder. Click the link in that email to activate your account. Once activated, you'll be prompted to sign in using the email address and password you created.

Scroll down to the link under the "Access the Motor Carrier Portal" section of the page. Click "Login" and you will be prompted to create a user profile. Click whether you are a motor carrier, registrant, or service provider and click next. Please note: If you operate using your own DOT authority, choose Motor Carrier. If you are leased to another carrier and operate using their DOT authority, choose Registrant.

Please read through the "Agreement of Responsible Party" and only click Accept if you agree to all terms in the agreement. Note: If you decline the terms in the agreement, you will not be able to use the Motor Carrier Portal. Click the Next button

Enter your Taxpayer ID and Tax ID Type (EIN, FEIN, SIN, or SSN). Enter numbers only, do not enter dashes (-). Note: If you are a US based carrier, be sure to select FEIN. Enter your USDOT number OR your KYTC customer number in the respective fields. Click Next. Note: Your KYTC customer number is not your KYU number.

Review the information on the page before proceeding. If the information is displayed correctly, click the Finish button. That's it! You will now be taken to your company's Status Dashboard, where you can apply for your KYU license under "What Can I Do?" along the top of the page.

Video Transcript #3 – KYU Account Reactivation
Kentucky's Weight Distance tax is a requirement for all motor carriers traveling on Kentucky roadways with a combined license weight greater than 59,999 pounds. Carriers can meet this requirement by obtaining the Kentucky Highway Use tax license, better known as the KYU license.

The KYU tax license requires quarterly tax filings regardless of travel for all qualified vehicles through KYU E-File. Even if you did not travel during a quarter, you must file zero miles to avoid penalty, interest, and a revocation fee of $500. The quarterly filings are due on the last day of the month following the end of the quarter. The filings should include all the miles in Kentucky for the entire fleet during the quarter. You must file KYU taxes quarterly to keep your account in good standing.

If an account falls out of good standing, additional actions may be needed to reinstate it. To reinstate an account, you must pay all due fees as well as file all due returns. Any KYU customer can pay for a previously filed tax return voucher and fees in the Kentucky Motor Carrier Portal, which can be found at this address: https://apps.transportation.ky.gov/motorcarrierportal/.

To start, you'll need to sign into your Kentucky Online Gateway, or KOG, account with a valid email address and password. If you're a registered carrier or registrant, you should see your company information. Click the KYU number hyperlink or under "What Can I Do" tab at the top of the screen select "KYU Online – Manage or Apply." The next step in reinstating your KYU account is to select "Billing History" or "Tax Filing History" from the 'What Can I Do' header on the dashboard. You may also click where it says "Bills Due" or "Filings Due" from the dashboard. Identify the bill and select the 'Pay' hyperlink. From the Payment screen, please select your preferred method of payment. Once payment has been made, you should receive an email (PDF) copy of the return that was filed. If you don't see that email within 30 minutes, please check your email's junk email folder.

If you have any questions or need additional help, please send your questions to tax.dmc@ky.gov or give us a call at 502-564-1257. Thank you.

Challenges in Development

The KTC research team successfully developed the project's instructional videos for motor vehicle customers, but different IT and personnel challenges contributed to project changes and delays. In recent years, KYTC has increasingly modernized its website pages available to the public, including its Motor Carrier Portal. During this project, KYTC developers modified their public sites on drive.ky.gov thereby impacting websites and interfaces available to IRP customers.[28] These developments delayed KTC video product efforts past their originally scheduled deliverable date so that the developer could provide the correct instructions and directions to motor carrier customers. Overall, the instructional videos were a success but continued changes to the Motor Carrier Portal may render them ineffective for future public use. KYTC assigned a lead IT agent to the KTC research team to assist with gaining system accesses, explain IT processes and capabilities, and otherwise assist KTC with the video development efforts. However, due to turnover, three different IT agents served in this coordination role over the course of this project. The time used to identify new coordination agents (when one departed) and brief the new agents on the project and their roles contributed to additional project delays.

Chapter 6 Conclusion

6.1 Findings

Finding #1 – Customer Call Data by Division

The Kentucky Transportation Cabinet received over 305,000 calls through its customer service line from June 13, 2021 through October 31, 2021. The majority of these calls are directed toward the Division of Driver Licensing representing 180,571 calls or 59.2% of the total, but the Division of Motor Carriers receives the second highest total at 37,704 calls or 12.4%. The Divisions of Driver Licensing and Motor Carriers exhibit similar trends when assessing customer service calls by duration coming in at 30,310 hours (60.1% of total) and 8,103 hours (16.1% of total) for the highest and second-highest call duration totals across all KYTC divisions.

Finding #2 – Customer Call Data by Tax Category

Customer service calls assigned to the Division of Motor Carriers are designated into one of 25 unique subject skills. The top three subject skills representing the highest volumes of customer calls included (1) IFTA/KIT/KYU, (2) IRP, and (3) Permits and Licenses. The "IFTA/KIT/KYU" and "Permits and Licenses" subject skills were further subdivided into tax category specialties whereby the KYU permit represented the primary customer question for both subject skill types. In summary, the KYU category represented the largest call topic among customers by both frequency of calls (7,595) and duration of calls (1,486 hours), while the IRP category came in second for both at frequency (5,426) and duration (777 hours). IFTA call themes came in third for frequency of calls (1,793) and duration of calls (391 hours) behind KYU and IRP. The other calls associated with tax categories included KIT, DOT, and UCR and were significantly less in duration than the top three.

Finding #3 – Customer Call Data by Topic

Along with associated tax categories, customers often used common key words in their calls to KYTC's customer service representatives. KTC identified 11 key words most often used in these customer conversations involving IFTA/KIT/KYU calls and 17 key words for those involving IRP calls. This analysis revealed "reactivate" as a top word choice for calls associated with IFTA/KIT/KYU and "account" as a top choice for calls associated with IRP. Additional analysis of phone calls revealed that customers skewed toward wanting to reactivate their KYU account and establish their IRP account. KTC's interviews affirmed these customer call themes with interview responses citing "reactivate KYU," "initially applying for a KYU account," and IRP account "requirements" and "login issues" as most prevalent.

Finding #4 – Motor Carrier Portal Updates

The Kentucky Transportation Cabinet has increasingly made efforts to modernize its website portals and platforms available to the public. Those sites targeting motor carrier customers, including the Motor Carrier Portal, have similarly received updates and modification to enhance their functionality and public service. However, ongoing changes to this portal and related modules presented delays to this project. More importantly, continued updates and modifications may change what the public can access or view in the future and may render these or other current instructional videos obsolete.

6.2 Recommendations

Recommendation #1 – Customer Call Data by Division

KYTC receives an excessive number of calls each year from the motorist public. Many of those calls emanate from motor carrier customers which derived the basis for this project. Yet, KYTC receives even more customer calls within their Division of Driver Licensing comprising approximately 59% of all customer calls. KYTC may want to consider a similar use of instructional video or other training approaches targeting this customer base to reduce the volume of calls and strain on their customer service representatives.

Recommendation #2 – Customer Call Data by Tax Category

The IFTA tax category represented the third largest tax category evaluated in this project behind only KYU and IRP. This project only targeted instructional videos on KYU and IRP but additional instructional videos on IFTA could be beneficial to further reduce motor carrier customer calls in the future.

Recommendation #3 – Customer Call Data by Topic

No recommendation to report.

Recommendation #4 – Motor Carrier Portal Updates

KYTC decision makers should be fully aware of any potential trade-offs when deciding how they want to synchronize IT architecture developments such as continued updates to the Motor Carrier Portal with public outreach efforts, including instructional training videos. Instructional training videos should be removed or updated, as appropriate, whenever substantive changes are made to motor carrier customer websites thereby rendering current videos obsolete.

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Appendix A Motor Vehicle Agencies by State

State	Motor Vehicle Website
Alabama	https://revenue.alabama.gov/motor-vehicle/
Alaska	http://doa.alaska.gov/dmv/
Arizona	https://azdot.gov/motor-vehicle-services
Arkansas	https://www.dfa.arkansas.gov/motor-vehicle
California	https://www.dmv.ca.gov/portal/
Colorado	https://dmv.colorado.gov/
Connecticut	https://portal.ct.gov/DMV
Delaware	https://www.dmv.de.gov/
Florida	https://www.flhsmv.gov/
Georgia	https://dds.georgia.gov/
Hawaii	http://hidot.hawaii.gov/
Idaho	https://itd.idaho.gov/itddmv/
Illinois	https://www.ilsos.gov/departments/vehicles/home.html
Indiana	https://www.in.gov/bmv/
Iowa	https://iowadot.gov/#services
Kansas	https://www.ksrevenue.gov/dovindex.html
Kentucky	https://drive.ky.gov/Pages/default.aspx
Louisiana	https://www.expresslane.org/
Maine	https://www.maine.gov/sos/bmv/
Maryland	https://mva.maryland.gov/Pages/default.aspx
Massachusetts	https://www.mass.gov/orgs/massachusetts-registry-of-motor-vehicles
Michigan	https://www.michigan.gov/sos
Minnesota	https://onlineservices.dps.mn.gov/EServices/_/
Mississippi	https://www.mmvc.ms.gov/
Missouri	https://dor.mo.gov/motor-vehicle/
Montana	https://dojmt.gov/driving/county-treasurer-motor-vehicle-offices/
Nebraska	https://dmv.nebraska.gov/
Nevada	https://dmv.nv.com/
New Hampshire	https://www.dmv.nh.gov/
New Jersey	https://www.state.nj.us/mvc/
New Mexico	https://www.mvd.newmexico.gov/
New York	https://dmv.ny.gov/
North Carolina	https://www.ncdot.gov/dmv/Pages/default.aspx
North Dakota	https://www.dot.nd.gov/divisions/mv/vehicle.htm

State	Motor Vehicle Website
Ohio	https://www.bmv.ohio.gov/
Oklahoma	https://oklahoma.gov/dps.html
Oregon	https://www.oregon.gov/odot/dmv/pages/offices/index.aspx
Pennsylvania	https://www.dmv.pa.gov/Pages/default.aspx/home/index.shtml
Rhode Island	https://dmv.ri.gov/
South Carolina	https://www.scdmvonline.com/
South Dakota	https://dor.sd.gov/individuals/motor-vehicle/
Tennessee	https://www.tn.gov/content/tn/driver-services.html
Texas	https://www.txdmv.gov/
Utah	https://dmv.utah.gov/
Vermont	https://dmv.vermont.gov/
Virginia	https://www.dmv.virginia.gov/#/
Washington	https://www.dol.wa.gov/
West Virginia	https://transportation.wv.gov/dmv/Pages/default.aspx
Wisconsin	https://wisconsindot.gov/Pages/online-srvcs/external/dmv.aspx
Wyoming	https://www.dot.state.wy.us/driverservices

Appendix B STATA Code for Initial Data Analysis

```
gen kyu=0
gen ifta=0
gen kit=0
gen irp=0
gen ucr=0
gen owod=0
replace kyu=1 if strmatch(resolution, "*KYU*")
replace kyu=1 if strmatch(resolution, "*kyu*")
replace kyu=1 if strmatch(resolution, "*Kyu*")
replace kyu=1 if strmatch(resolution, "*weight distance*")
replace kyu=1 if strmatch(resolution, "*weight-distance*")
replace kyu=1 if strmatch(resolution, "*Weight Distance*")
replace kyu=1 if strmatch(resolution, "*Weight-Distance*")
replace kyu=1 if strmatch(resolution, "*vehicle inventory*")
replace kyu=1 if strmatch(resolution, "*inventory*")
replace ifta=1 if strmatch(resolution, "*IFTA*")
replace ifta=1 if strmatch(resolution, "*ifta*")
replace ifta=1 if strmatch(resolution, "*fuel tax*")
replace ifta=1 if strmatch(resolution, "*fuel*")
replace kit=1 if strmatch(resolution, "*KIT*")
replace kit=1 if strmatch(resolution, "*kit*")
replace irp=1 if strmatch(resolution, "*IRP*")
replace irp=1 if strmatch(resolution, "*irp*")
replace ucr=1 if strmatch(resolution, "*UCR*")
replace ucr=1 if strmatch(resolution, "*ucr*")
replace ucr=1 if strmatch(resolution, "*Unified Carrier Registration*")
replace ucr=1 if strmatch(resolution, "*unified carrier registration*")
replace owod=1 if strmatch(resolution, "*owod*")
replace owod=1 if strmatch(resolution, "*ow/od*")
replace owod=1 if strmatch(resolution, "*OWOD*")
replace owod=1 if strmatch(resolution, "*OW/OD*")
replace owod=1 if strmatch(resolution, "*Overweight*")
replace owod=1 if strmatch(resolution, "*overweight*")
replace owod=1 if strmatch(resolution, "*Over weight*")
replace owod=1 if strmatch(resolution, "*over weight*")
replace owod=1 if strmatch(resolution, "*Overwidth*")
replace owod=1 if strmatch(resolution, "*overwidth*")
replace owod=1 if strmatch(resolution, "*Over width*")
replace owod=1 if strmatch(resolution, "*over width*")
replace owod=1 if strmatch(resolution, "*Overlength*")
replace owod=1 if strmatch(resolution, "*overlength*")
replace owod=1 if strmatch(resolution, "*Over length*")
replace owod=1 if strmatch(resolution, "*over length*")
replace kyu=1 if strmatch(subject, "*KYU*")
replace kyu=1 if strmatch(subject, "*kyu*")
replace kyu=1 if strmatch(subject, "*Kyu*")
replace kyu=1 if strmatch(subject, "*weight distance*")
replace kyu=1 if strmatch(subject, "*weight-distance*")
replace kyu=1 if strmatch(subject, "*Weight Distance*")
replace kyu=1 if strmatch(subject, "*Weight-Distance*")
```

```
replace kyu=1 if strmatch(subject, "*vehicle inventory*")
replace kyu=1 if strmatch(subject, "*inventory*")
replace ifta=1 if strmatch(subject, "*IFTA*")
replace ifta=1 if strmatch(subject, "*ifta*")
replace ifta=1 if strmatch(subject, "*fuel tax*")
replace ifta=1 if strmatch(subject, "*fuel*")
replace irp=1 if strmatch(subject, "*IRP*")
replace irp=1 if strmatch(subject, "*irp*")
replace ucr=1 if strmatch(subject, "*UCR*")
replace ucr=1 if strmatch(subject, "*ucr*")
replace ucr=1 if strmatch(subject, "*Unified Carrier Registration*")
replace ucr=1 if strmatch(subject, "*unified carrier registration*")
replace owod=1 if strmatch(subject, "*owod*")
replace owod=1 if strmatch(subject, "*ow/od*")
replace owod=1 if strmatch(subject, "*OWOD*")
replace owod=1 if strmatch(subject, "*OW/OD*")
replace owod=1 if strmatch(subject, "*Overweight*")
replace owod=1 if strmatch(subject, "*overweight*")
replace owod=1 if strmatch(subject, "*Over weight*")
replace owod=1 if strmatch(subject, "*over weight*")
replace owod=1 if strmatch(subject, "*Overwidth*")
replace owod=1 if strmatch(subject, "*overwidth*")
replace owod=1 if strmatch(subject, "*Over width*")
replace owod=1 if strmatch(subject, "*over width*")
replace owod=1 if strmatch(subject, "*Overlength*")
replace owod=1 if strmatch(subject, "*overlength*")
replace owod=1 if strmatch(subject, "*Over length*")
replace owod=1 if strmatch(subject, "*over length*")
replace kyu=1 if strmatch(symptom, "*KYU*")
replace kyu=1 if strmatch(symptom, "*kyu*")
replace kyu=1 if strmatch(symptom, "*Kyu*")
replace kyu=1 if strmatch(symptom, "*weight distance*")
replace kyu=1 if strmatch(symptom, "*weight-distance*")
replace kyu=1 if strmatch(symptom, "*Weight Distance*")
replace kyu=1 if strmatch(symptom, "*Weight-Distance*")
replace kyu=1 if strmatch(symptom, "*vehicle inventory*")
replace kyu=1 if strmatch(symptom, "*inventory*")
replace ifta=1 if strmatch(symptom, "*IFTA*")
replace ifta=1 if strmatch(symptom, "*ifta*")
replace ifta=1 if strmatch(symptom, "*fuel tax*")
replace ifta=1 if strmatch(symptom, "*fuel*")
replace irp=1 if strmatch(symptom, "*IRP*")
replace irp=1 if strmatch(symptom, "*irp*")
replace ucr=1 if strmatch(symptom, "*UCR*")
replace ucr=1 if strmatch(symptom, "*ucr*")
replace ucr=1 if strmatch(symptom, "*Unified Carrier Registration*")
replace ucr=1 if strmatch(symptom, "*unified carrier registration*")
replace owod=1 if strmatch(symptom, "*owod*")
replace owod=1 if strmatch(symptom, "*ow/od*")
replace owod=1 if strmatch(symptom, "*OWOD*")
replace owod=1 if strmatch(symptom, "*OW/OD*")
replace owod=1 if strmatch(symptom, "*Overweight*")
replace owod=1 if strmatch(symptom, "*overweight*")
```

```
replace owod=1 if strmatch(symptom, "*Over weight*")
replace owod=1 if strmatch(symptom, "*over weight*")
replace owod=1 if strmatch(symptom, "*Overwidth*")
replace owod=1 if strmatch(symptom, "*overwidth*")
replace owod=1 if strmatch(symptom, "*Over width*")
replace owod=1 if strmatch(symptom, "*over width*")
replace owod=1 if strmatch(symptom, "*Overlength*")
replace owod=1 if strmatch(symptom, "*overlength*")
replace owod=1 if strmatch(symptom, "*Over length*")
replace owod=1 if strmatch(symptom, "*over length*")
gen closed_resolution=0
gen closed_subject=0
gen closed_symptom=0
replace closed_resolution=1 if strmatch(resolution, "*Closed due to Abandoned Logged Incident*")
replace closed_subject=1 if strmatch(subject, "*Closed due to Abandoned Logged Incident*")
replace closed_symptom=1 if strmatch(symptom, "*Closed due to Abandoned Logged Incident*")
gen closed=closed_resolution + closed_subject + closed_symptom
replace closed=1 if closed==3
drop closed_resolution closed_subject closed_symptom
gen total=kyu+ifta+kit+irp+ucr+owod+closed
```

Appendix C Search Terms for IFTA-KIT-KYU Call

Key Words	Search Terms	Tax Category	Frequency of Calls (Number)	Duration of Calls (Seconds)	Duration of Calls (Minutes)	Duration of Calls (Hours)
Reactivate	activ + ifta	IFTA	99	101,179	1,686	28
	activ + kit	KIT	61	51,748	862	14
	activ + kyu	KYU	2,256	1,623,919	27,065	451
	activ	All	2,373	1,721,691	28,695	478
Tax	tax + ifta	IFTA	327	274,653	4,578	76
	tax + kit	KIT	55	38,266	638	11
	tax + kyu	KYU	1,266	920,395	15,340	256
	tax	All	1,958	1,423,336	23,722	395
Letter	letter + ifta	IFTA	28	22,102	368	6
	letter + kit	KIT	15	11,580	193	3
	letter + kyu	KYU	213	169,804	2,830	47
	letter	All	268	211,929	3,532	59
Notice	notice + ifta	IFTA	11	8,768	146	2
	notice + kit	KIT	6	4,473	75	1
	notice + kyu	KYU	69	50,494	842	14
	notice	All	85	62,539	1,042	17
Filing	filing + ifta	IFTA	205	179,968	2,999	50
	filing + kit	KIT	17	12,493	208	3
	filing + kyu	KYU	270	211,151	3,519	59
	filing	All	485	386,549	6,442	107
Penalty	penalty + ifta	IFTA	20	15,613	260	4
	penalty + kit	KIT	5	4,185	70	1
	penalty + kyu	KYU	330	229,634	3,827	64
	penalty	All	389	269,282	4,488	75

Key Words	Search Terms	Tax Category	Frequency of Calls (Number)	Duration of Calls (Seconds)	Duration of Calls (Minutes)	Duration of Calls (Hours)
Account	account + ifta	IFTA	251	225,585	3,760	63
	account + kit	KIT	35	30,878	515	9
	account + kyu	KYU	878	650,189	10,836	181
	account	All	1,348	1,000,033	16,667	278
Cancel	cancel + ifta	IFTA	38	31,103	518	9
	cancel + kit	KIT	21	16,128	269	4
	cancel + kyu	KYU	161	115,702	1,928	32
	cancel	All	218	158,929	2,649	44
Detained	detain + ifta	IFTA	8	8,314	139	2
	detain + kit	KIT	3	2,923	49	1
	detain + kyu	KYU	154	122,928	2,049	34
	detain	All	205	163,608	2,727	45
Status	status + ifta	IFTA	25	18,462	308	5
	status + kit	KIT	2	1,846	31	1
	status + kyu	KYU	119	94,883	1,581	26
	status	All	163	123,589	2,060	34
Amend	amend + ifta	IFTA	29	31,205	520	9
	amend + kit	KIT	2	1,197	20	0
	amend + kyu	KYU	92	63,593	1,060	18
	amend	All	128	93,277	1,555	26

Appendix D Search Terms for IRP Calls

Related Categories by No.	Key Words by Subject (Symptom)	Number of Calls	Duration of Calls (s)
1a	apportion	370	275,931
1b	plate	603	445,085
2	renew	518	412,650
3	cab card	413	288,185
4a	decal	54	33,132
4b	tag	96	69,098
4c	sticker	43	24,009
5a	check	195	124,320
5b	status	107	73,022
5c	verify	48	41,879
6	account	803	691,768
7	address	126	107,689
8a	add	151	126,371
8b	adding	54	40,534
8c	remove	67	54,123
8d	removing	42	34,052
8e	inventory	48	39,495

Appendix E Interview Template for Division of Customer Service

1. In coordinating with KYTC, we were able to obtain a CMV customer service call-in dataset for the period from June through October in 2021. In this data, we identified six primary tax categories for CMV customer call-ins including KYU, IRP, IFTA, KIT, DOT, and UCR. Among these tax categories, what are your experiences with them by call volume and call duration?

   a. For you personally, which of the provided categories are the two most common in terms of call frequency?

   b. For you personally, which of the provided categories are the two most common in terms of call duration on average (i.e., two longest types)?

   c. For your provided answers above, do your listed tax categories tend to be fairly uniform throughout the year or are they seasonal and spike during certain times of year? Please describe for each (as applicable).

2. For your category answers by call volume (see 1a above), what are the most common themes that you've noticed with respect to call-in questions? Some themes may include, but are not limited to, the following: reactivate account, check account status, update account, received a KYTC letter or notice, file a return, amend a return, detained vehicle, etc.

   a. Please list two or more major themes and briefly describe your experiences involving those themes with respect to your first provided answer in 1a above (e.g., KYU, IRP, IFTA, KIT, DOT, or UCR).

   b. Please list two or more major themes and briefly describe your experiences involving those themes with respect to your second provided answer in 1a above (e.g., KYU, IRP, IFTA, KIT, DOT, or UCR).

3. For your category answers by call duration (see 1b above), what are the most common themes that you've noticed with respect to call-in questions? See list of possible topics above.

   a. Please list two or more major themes and briefly describe your experiences involving those themes with respect to your first provided answer in 1b above (e.g., KYU, IRP, IFTA, KIT, DOT, or UCR).

   b. Please list two or more major themes and briefly describe your experiences involving those themes with respect to your second provided answer in 1b above (e.g., KYU, IRP, IFTA, KIT, DOT, or UCR).

4. This SPR project is focused on developing future online training/instructional videos for Motor Carrier Portal customers to better help them use the online services provided (and by extension, reduce the demands related to customer service questions).

   a. From a Motor Carrier Portal perspective and generally speaking, are the questions that CMV customers call-in related to:
      i. A manual form submission?
      ii. Performing an online electronic process?
      iii. Finding additional information to resolve a question?

      iv.   Something else? If yes, please describe.

   b.   Based on the process listed above (4a, i-iv), which of those would offer the best opportunity to accomplish our goal in helping customers navigate the Motor Carrier Portal without resorting to a phone call?

5.   A few State Departments of Transportation have provided online training videos on their websites to assist their customers with navigating self-service features on their portals. These videos are often listed by individual training topic and feature a person navigating the website (along with voice and text descriptions of their actions).

   a.   Do you recommend a similar approach for this video?

   b.   If not, do you have other recommendations for a preferred video format?

   c.   Is there a video produced by another state DOT or government agency that you think is a good example of what KYTC should produce for DVR video tutorials?

6.   Are there are any other specific topics related to this project that were not covered and should be discussed?

Appendix F Interview Template for One Stop Shop

1. For IRP customer service calls, what are the most common themes that you've noticed with respect to call-in questions? Some themes may include, but are not limited to, the following: obtain an apportioned plate, renew IRP registration, check status of mailed plate/cab card/etc., add/delete a vehicle, etc.

   a. Please list the two most common themes by call frequency (i.e., no. of calls) and briefly describe your experiences involving those themes.

   b. Please list the two most common themes by call duration (i.e., length of calls) and briefly describe your experiences involving those themes.

2. This SPR project is focused on developing future online training/instructional videos for Motor Carrier Portal customers to better help them use the online services provided (and by extension, reduce the demands related to customer service questions). A few State Departments of Transportation already provide online training videos on their websites to assist their customers with navigating self-service features on their portals. These videos are often listed by individual training topic and feature a person navigating the website (along with voice and text descriptions of their actions).

   a. Do you recommend a similar approach for this video?

   b. If not, do you have other recommendations for a preferred video format?

   c. Is there a video produced by another state DOT or government agency that you think is a good example of what KYTC should produce for DVR video tutorials?

3. Based on our discussion and the project's goals, which training topics do you believe would offer the best opportunity to accomplish our goal in helping IRP customers navigate the Motor Carrier Portal without resorting to a phone call?

4. Are there are any other specific topics related to this project that were not covered and should be discussed?