

COST-BENEFIT STUDY OF ONLINE SERVICES

PREPARED BY THE **DEPARTMENT OF
INFORMATION RESOURCES**
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Executive Summary

The benchmarking study found that cost savings and improved service delivery are the key benefits realized by agencies as a result of placing applications and services on TexasOnline. Government entities can experience personnel cost savings as the adoption rates of the online channel increase. If the benchmarked agencies aggressively marketed their online service to get the adoption rate to at least 30%, they could save personnel costs dedicated to the service—between \$35,207 and \$1,905,217—with the Agent License Renewal service at the Texas Department of Insurance (TDI) representing the low end and the Sales Tax Filing service at the Comptroller of Public Accounts (CPA) representing the high end. If adoption rates for the online service channel were to reach 50%, the benchmarked agencies could save personnel costs dedicated to the service—between \$58,679 and \$3,175,362—with TDI’s Agent License Renewal service representing the low end and the CPA’s Sales Tax Filing service representing the high end. Such personnel cost avoidance would allow reallocation of these resources to other core functions within the program or agency.

All of the pilot agencies found that there were significant improvements in service delivery to citizens and businesses. Placing services online has enabled agencies to reduce internal processing times. The following are examples:

- Before the Comptroller implemented its online sales tax filing service, WebFile, it could take up to seven hours to enter and process a sales tax filing. Now, sales taxes filed online are processed instantly.
- The Texas Education Agency found that the processing time for its Information Distribution service is 90% faster online than offline.
- The Department of Public Safety found that the processing time for the online driver license renewal process is 90% faster than the mail renewal process.

Online implementation of government services also makes the payment process timelier because checks do not have to be processed manually. This ensures that the Treasury receives money more quickly than with traditional offline processes. Consequently, the turnaround time of providing the service to the requester has been accelerated, thereby meeting the needs of citizens in a more convenient and less time consuming manner.

For agencies to continue to see improvements in service delivery and costs, they must also improve their existing offline processes to be compatible with their online services. By providing interfaces to other internal systems, agencies can improve access to information and offer a service in an expanded number of locations without disbursing staff. The reduction in transaction cost for CPA’s Texas Tomorrow Fund is attributable to the implementation of a new administrative system that automates backend processes.

The pilot agencies that have participated in this benchmarking study have all reported significant benefits to the agency and citizens since the implementation of their services on TexasOnline. Most often agencies report benefits to the citizens in the form of improved customer

service due to faster turnaround time, enhanced public access, and accelerated service delivery. By automating traditionally manual processes and using the TexasOnline infrastructure, state agencies will be able to provide citizens and businesses with the ability to interact with government more efficiently, effectively, and at a cost savings to the state.

Benchmarking Methodology

TexasOnline was initiated by the 76th Texas Legislature with the intent of providing Texans with a secure technology infrastructure for the innovative delivery of online government services. The project was designed to establish a common electronic system to create a uniform venue through which state and local governments can send documents and receive applications and payments. Accordingly, this benchmarking study was conducted to determine the benefits of TexasOnline for state agencies and citizens.

This benchmarking study has attempted to assess the benefits of e-government solutions by measuring the value to both agencies and citizens. The exercise is composed of two templates with corresponding guides: the Pre-Implementation Benchmarking Template and the Post-Implementation Benchmarking Template. The intent is to have a governmental entity complete the pre-implementation template before placing a service online. The data provided in the pre-implementation template serves as the benchmark against which the post-implementation data is compared. Governmental entities complete the post-implementation template six months to a year after placing the service online. Governments can elect to have a post-implementation template completed every year to track how their resources are being dedicated to the service placed online.

The templates are designed to be suitable for a variety of agencies performing work in a variety of ways. Emphasis has been placed on developing easy-to-complete templates that can be customizable whenever necessary. Every agency is different and agencies perform their work in a variety of ways—from highly automated to mostly manual processes. The ultimate objective of the benchmarking exercise is to help agencies identify the factors that drive the costs of activities and to identify the resources consumed in performing them.

Critical components are reviewed with emphasis on identifying the costs related to the current method of performing tasks and the benefits that may be gleaned by moving the service to the Internet. The intent of this activity is not to create activity-based costing in agencies, but rather to benchmark or measure the impact of providing a service through TexasOnline. This benchmarking exercise attempts to provide ways to identify quantitative measures that may show improvements in areas such as transaction processing speed, employee productivity, and service costs. The templates are designed to capture an overall process and then break down each step of the process into quantifiable steps that will assist in determining the costs and benefits of providing services through TexasOnline.

To identify the costs of current processes and the benefits of moving the service online, agencies were asked to complete the pre- and post-implementation templates with information on workflow, staffing, transactions, expenses, and benefits.

- **Workflow** — This section asks the agency to document the workflow for the particular service to determine what tasks are conducted. This step indirectly forces the agency to review its current processes and to think about ways of streamlining them. This section

also asks the agency to identify all exceptions that may occur when processing both an online and offline (manual) transaction.

- **Staff Resources** — The agency is asked for information about the employees dedicated either in full or in part to the service, such as the number of employees dedicated to the service, the hours worked on the service each day, employee salaries and overtime, and reallocated and temporary staff.
- **Transactions** — This section asks the agency for the number of transactions processed, processing times, and turnaround times. The cost per transaction is calculated based on the data as reported by the agency. Processing and turnaround times are used to benchmark how long it takes to process a transaction before and after it is placed online.

The agency documents its activities according to some of the following categories: accounting, receiving, customer service, and application maintenance. This serves two purposes—primarily, it cross checks the Workflow section, but it also allows for the documentation of shifted work and resources. For example, before going online with a service, an agency may spend 20% of its time in receiving and 10% in application maintenance; whereas, once a service goes online, the agency may spend less time on receiving and more time on application maintenance.

This section also asks how the public currently requests the service—walk-in, mail, fax, telephone, or online requests—to determine any shift in population from a traditional request method to online channel. This information is used to measure the adoption rate of an online service and to identify the most effective marketing methods.

- **Expenses** — This section asks the agency to document the expenses related to the service in terms of costs for supplies, travel, mailing, and telephone. These general categories follow the object codes used by the Comptroller and the Legislative Budget Board, but are broad enough for use by other entities, such as local governments.
- **Benefits** — The pre-implementation template asks what benefits the agency finds important when placing the service online. The post-implementation template asks the agency if it achieved those benefits.

Recommendations

After analyzing the data provided by the agency, the Department of Information Resources (DIR) makes recommendations to the agency suggesting how the agency can further take advantage of the benefits of providing services to the public online.

Participating Agencies

In response to an invitation extended by DIR to all agencies participating in TexasOnline, seven agencies agreed to participate in the pilot study. Analyses of the qualitative and quantitative benefits of five services offered on TexasOnline by four of these pilot agencies—the Comptroller of Public Accounts, Department of Public Safety, Texas Department of Insurance, and Texas Education Agency—are found in the appendices. Table 1 shows the online services offered by the participating agencies in the benchmarking study.

Table 1. Agencies Participating in Pilot Study

Agency	Name of Online Service	Reference Name for Study	Implementation Data Provided?	
			Pre-	Post-
Comptroller of Public Accounts (CPA)	Sales Tax Filing (WebFile)	CPA–Sales Tax Filing	Yes	Yes
	Texas Tomorrow Fund Initial Application	CPA–Texas Tomorrow Fund	Yes	Yes
Texas Department of Health (TDH)	Marriage and Family Therapist License Renewal	N/A	Yes	*
	Professional Counselor License Renewal	N/A	Yes	*
	Sex Offender Treatment License Renewal	N/A	Yes	*
	Social Worker License Renewal	N/A	Yes	*
Department of Public Safety (DPS)	Driver License Renewal	DPS–Driver License Renewal	Yes	Yes
Texas State Board of Pharmacy (TSBP)	Pharmacist License Renewal	N/A	Yes	*
Texas Department of Insurance (TDI)	Agent Renewal License	TDI–Agent License Renewal	Yes	Yes
Texas Education Agency (TEA)	Distribution of Longitudinal Student Performance Record and Career and Technology Education Data	TEA–Information Distribution	Yes	Yes
Texas Funeral Service Commission (TFSC)	Funeral Director and Embalmer License Renewal	N/A	Yes	*

* The post-implementation template for this service could not be completed for the pilot study because the service had not been online for more than six months

Benefits of E-Government

This benchmarking study was intended to evaluate how placing government services online benefit both state agencies and citizens. Placing services online has allowed government entities to experience improved efficiencies in data collection and processing. Such improvements translate into cost savings for the agencies. By using TexasOnline, agencies can expect to save money in personnel costs that would ordinarily be allocated to traditional offline processes. Moreover, agencies have been able to improve service delivery to their constituents. Citizens now have the opportunity to conduct business with the government at their convenience. By improving the level of customer service, agencies are able to focus their attention on serving their constituents in the most cost-effective and efficient manner.

Other Cost-Savings Studies

A handful of government jurisdictions around the country have begun to realize the merits of quantifying the benefits of e-government investments. A variety of methods have been used to justify e-government. Some jurisdictions are still in the process of developing frameworks to measure the costs and returns on investment for e-government projects. Other jurisdictions have conducted analyses to predict the prospective estimated benefits. Still other jurisdictions have led a path similar to Texas, in that they have conducted a before and after cost comparison of online implementation of government services. The following are examples of the cost-saving studies conducted by other jurisdictions.

- **City of Corpus Christi, Texas** — Corpus Christi determined that it costs \$1.56 to process one bill or fine payment manually. The city estimates that online bill or fine payments will cost the city about one cent per transaction.¹
- **City of Fort Lauderdale, Florida** — The City of Fort Lauderdale automated its procurement process and has saved approximately \$2,000 on printing, mailing, and envelopes per year. After two years of implementation, the city has reached its return on investment and paid for the project. In addition to the hard dollar savings, the city has also saved 500 hours per year in clerk's time, which can now be devoted to other duties.²
- **City of Tampa, Florida** — Tampa has been examining the benefits reaped by citizens. Tampa has developed a tool that allows a citizen to calculate the cost savings of doing business online vs. traveling to city offices.³

¹ Falgoust, Neal, "E-gov Will Let Citizens Pay Fines Online," *Corpus Christi Caller-Times*, Wednesday, 13-Feb-2002, Local Section, page B1 and B5.

² Torres, Maurice, SAP Public Services (maurice.torres@sap.com), October 28, 2002, Return on Investment Lessons Learned Success Story [Personal e-mail].

³ City of Tampa, *eGovernment Savings Calculator*. Retrieved 19-Sep-2002, from <www.tampagov.net/egov/savings_estimator/index.asp>.

- **State of Michigan** — Michigan estimates a savings of \$213,783 over three years by allowing the public to file sales taxes online. Michigan also foresees saving \$845,350 over three years from its childcare provider billing system.⁴
- **State of Ohio** — Ohio calculated the savings of its Online Employment Application Process and found that providing the application process online saves the state approximately \$270,000 annually.⁵
- **State of Wisconsin** — An effort is underway to develop tools for assessing both the hard and soft benefits generated by Wisconsin's e-government projects.⁶
- **Victoria, Australia** — Agencies and departments reported that 65% of their programs achieved cost reductions or revenue enhancements as a result of online project implementations. They also indicated that for every \$1 spent on development, \$1.35 worth of additional value was delivered.⁷

These jurisdictions are measuring more than transaction costs and have assessed the value of intangible benefits such as quality-of-life improvements and improving convenience for citizens. By measuring the value of an investment in this way, jurisdictions can make a better case for continuing e-government investments based on both saving money and improving the quality of life for citizens.

Benefits to Texas Government Agencies

- **Online services outsource data entry to the citizen, reducing the agency staff time spent on manual processing.** In many of the online applications, citizens or businesses key in their own information when they use the online system. Having the citizens or businesses enter their own information reduces the amount of agency staff time spent entering transaction information into the system. Data entry is still a part of the manual processing of mail and walk-in transactions and can be a time consuming task. Agency staff often have to decipher handwritten application forms for mail and walk-in transactions. Errors in deciphering application forms are reduced when data entry is performed by the citizen or business.
- **Online services allow for automated error-checking, reducing agency staff time spent on exception handling.** In addition to the having the citizen enter data, online application forms can be designed to automatically check for errors, thereby reducing the number of exceptions that need to be corrected by agency staff. In some cases, agencies reported having no

⁴ Hogan, Jim, Acting Deputy Director of e-Michigan, E-Gov Conference 2002: Enabling the Business of Government, Session 2-3 E-Technologies and Citizen-Centric Portals, June 24-27, 2002.

⁵ Alt, Doug, Ohio Department of Administrative Services (doug.alt@das.state.oh.us) March 7, 2001, benchmarking/cost-benefit analysis [Personal email].

⁶ Towns, Steve, "Running the Numbers," *Government Technology*, June 2002, Features Section.

⁷ State of Victoria, Australia. *Government Online: A Report Card 1996-2001*, page 9.

exceptions for online application forms. One agency realized an 8% decline in overall exceptions because the online process was designed so that the citizen cannot complete a transaction without filling in the required fields.

- **Online services have reduced agencies' average processing time or "hands-on" time.** For the majority of the pilot applications, the implementation of the online channel has greatly reduced the average processing time or "hands-on" time in the agencies. Three of the four agencies benchmarked experienced a 50% to 100% reduction in the time it takes to process their service. The CPA–Sales Tax Filing service, WebFile, processes filings instantaneously. In contrast, offline sales tax filings can take an average of seven hours to process.
- **Online services have reduced agencies' average turnaround time.** The implementation of the online delivery channel has also resulted in faster turnaround time for the citizen and the agency. This means that citizens who accessed the online version of the service receive information or service faster than if they accessed the agency through more traditional service channels. The DPS–Driver License Renewal service is 25% faster than renewing a driver's license by mail. In addition, the TEA–Information Distribution service is 75% faster than the offline channels.
- **Online services allow for the timelier deposit of funds, resulting in increased interest earned for the state.** Online services provide for the timelier deposit of funds, meaning tax dollars reach the Treasury sooner and are available for interest earnings. Most fees or payments are currently made to the state by mailing a form and check to a state agency. The delivery of a piece of mail to an agency can take the postal service from one to seven days. Once it reaches the agency, it can take another few days to enter the data and process the payments. The checks can take up to a few days to process at the bank before being deposited in the State Treasury. Online services can get payments into the State Treasury faster, within 24 to 48 hours, with little or no intervention by agency staff.
- **Online services can enable agencies to more easily implement subsequent programs or services online.** After a government entity places one service online, it can use the TexasOnline infrastructure to provide other services and programs online. All the benchmarked agencies have either used or intend to use TexasOnline to provide additional services.
- **Online services can enable agencies to streamline operations for particular processes.** To experience continued savings, government entities must invest in improving processes for offline channels. The CPA–Texas Tomorrow Fund service did this by implementing a new administrative system that automates backend processes. This is a departure from conventional wisdom, which assumes that the Internet will remove the need to conduct process improvements on other channels. By improving offline processes while also utilizing TexasOnline to deliver services, state agencies will be able to provide citizens and businesses with the ability to interact with government more efficiently, effectively, and at a cost savings to the state.

- **Online services can enable agencies to offer a service to an expanded number of locations without disbursing staff.** An online service channel allows the government entity to deliver services to citizens across the state and abroad without having to staff each location. For example, Texans all over the world have used the online DPS–Driver License Renewal service.
- **Online services can reduce an agency’s cost per transaction.** This study focused on cost savings from two perspectives: cost per transaction and personnel cost savings. The cost per transaction is a unit of measurement that was calculated both before and after online implementation in order to measure the quantitative benefits of placing a service online.

Note: Determining the cost per transaction was difficult because of standard state agency accounting practices, which do not track expenses and staff resources at the level of detail needed to complete the benchmarking templates. Details of expenditures are needed at the service level in order to track the costs of a particular service provided by an agency. Agencies often had to estimate expenses and staff work hours relating to the service being benchmarked. These estimates could present some margin of error in the transaction costs presented in this study.

The agencies participating in this study either have already experienced or anticipate experiencing a reduction in transaction costs by placing their services online. Table 2 shows that before a cost savings can be achieved, the cost per transaction will rise immediately after placing a service online.

However, this temporary increase is not unusual, considering that this study accounted for the “start-up” or capital costs of development, hardware, and software in the first year of online implementation. Consequently, this initial rise in transaction costs is to be

Table 2. Cost Per Transaction (CPT) Estimates

	CPA–Sales Tax Filing	CPA–Texas Tomorrow Fund	DPS–Driver License Renewal	TDI–Agent License Renewal	TEA–Information Distribution
Pre-Implementation CPT	\$2.72	\$48.86	\$2.98	\$2.57	\$35.12
Post-Implementation CPT (with capital costs)	\$5.36 ⁸	Not Applicable ⁹	\$3.40	\$2.71	\$241.86
Change in CPT from Pre- to Post-Implementation (with capital costs)	97%	Not Applicable	14%	5%	589%
Post-Implementation CPT (without capital costs)	\$0.78 ⁸	\$36.47	\$2.87	\$1.94	\$30.05
Change in CPT from Pre- to Post-Implementation (without capital costs)	71%	25%	4%	25%	14%

⁸ The post-implementation cost per transaction for the CPA–Sales Tax Filing was calculated differently than the other services in this pilot study. The cost per transaction for the other agencies were calculated to include both online and offline costs associated with the delivery of the service after online implementation. The CPA–Sales Tax Filing calculated only the online transaction cost after implementation. The amounts \$5.36 and \$0.78 do not include the offline cost after implementation as the other services in this pilot study do.

⁹ The CPA–Texas Tomorrow Fund did not report having any capital costs associated with its online application. However, there were capital costs associated with the new client server system. These costs were accounted for in this study.

expected. As the agencies enter their second year online, the cost per transaction is expected to drop below that of the pre-online cost per transaction. When comparing the pre-online and the post-online projections that exclude capital costs, the agencies are expected to experience or have already experienced a reduction in their transaction costs ranging from 4% to 71%.

- **Online services allow agencies to reallocate personnel.** As more of the public uses government services online, agencies can expect to see a decrease in the cost per transaction because of reduced processing and turnaround times. The majority of the cost per transaction reductions can be found in personnel costs. Services that have a steady transaction volume from year to year may find that their dedicated personnel have time to devote to other areas because tasks associated with the service are no longer conducted at the pre-online volume. Such cost avoidance allows agencies to reallocate employees to other core functions. For example: the CPA–Sales Tax Filing service has allowed more than 1,000 staff hours to be reallocated to other agency functions in fiscal 2002. In fiscal 2003, this service is projected to allow almost 4,000 staff hours to be reallocated to other agency functions. These employees are generally retained and rededicated to understaffed services, programs, or allow the agencies to reduce the need to hire additional staff.

However, such personnel reallocation cannot occur unless the government entity takes the initiative to promote its online services through targeted marketing efforts and incentives. While the public increasingly uses the Internet to shop and conduct business, the adage “build it and they will come” does not apply to government online services. Citizens must be made aware that they can interact with their government online and receive value for doing so. While there are costs to print and distribute marketing materials, there is a definite benefit to justify marketing costs. Not only will there be savings to the agency by conducting more services online than by the more expensive walk-in, mail, or fax approaches, the agencies can also choose to re-deploy staff to more core functions within the agency. Agencies can re-engineer their business processes as a result and become more efficient at providing services. In addition, agencies can use effective, yet low-cost means of driving constituents to the online service channel, such as statements on renewal notices, articles in agency newsletters, and announcements on telephone hold messages.

Another means of driving online adoption rates up is to provide supplemental value-added services. Displaying account summaries, sending email alerts, and allowing personal profiles to be updated are examples of supplemental value-added services that can be offered in conjunction with an agency’s core online service.

Agencies that actively promote online services to their constituents may experience cost avoidance similar to those experienced by the agencies benchmarked in this report. If four of the benchmarked services marketed their online service and/or began offering supplemental value-added services in order to reach an adoption rate of 30%, they could avoid personnel costs ranging between \$35,207 and \$1,905,217, with the TDI–Agent License Renewal service representing the low end and the CPA–Sales Tax Filing service

representing the high end. At an adoption rate of 50%, the personnel costs avoided for the same four services would range from \$58,679 to \$3,175,362, with the TDI-Agent License Renewal service representing the low end and the CPA-Sales Tax Filing service representing the high end.¹⁰ Projections assume that total transaction volume and all other expenses remain constant.

The TEA-Information Distribution service is not included in the previous figures because the agency's staff allocations to the benchmarked service were minimal; i.e., before the service was online, the majority of the tasks and activities associated with the service were outsourced. However, if TEA maintained its current online adoption rate of 87%, it would save the agency \$1,900 in service-related expenses.

As demonstrated by benchmarked agencies, the majority of cost avoidance will be in the form of personnel reallocation. However, placing services online can also result in additional savings in expenditures for printing, postage, supplies, and outsourcing, as was the case for TEA. As the use of online channels increase, agencies should expect to see reductions in personnel expenses dedicated to the particular service, thereby allowing them to reallocate these resources to other core functions within the program or agency.

Benefits to Texas Citizens

- **Online services increase customer convenience.** Citizens have the convenience of transacting with the government 24 hours a day, seven days a week, 365 days a year from any location. Convenience is also improved because citizens can use credit cards and, in some cases, electronic checks to pay for online transactions. The soccer mom, the college student, the hourly worker, and the full-time executive can now access government services online, eliminating the need to spend precious family and work hours in a government office. Some of the comments from public surveys include:
 - *I have two children and a busy schedule. This was very convenient for me. Thank you!*
 - *It was a lot better than waiting in line at the office.*
 - *I think that this is wonderful. I work as many as 50 hours a week and do not get the time to go to the office in person to take care of this.*
 - *I probably would not have been able to take care of this for another two weeks with the current demands from my job.*

¹⁰ The ranges of personnel cost reallocation cited do not represent the cost reallocation of any one agency. Rather, the benchmarked applications' personnel cost reallocation lies within this range. The figures cited are the range of savings that an agency may experience depending on number of employees, the salaries of the employees, and the time dedicated to the service within each agency.

- **Online service means faster, more convenient service.** For three of the agencies benchmarked, citizens using the online system receive requested services between 25% to 50% faster.
- **Online services provide secure access and payment.** Through the implementation of the online channel, secure records containing citizen information can be transferred through TexasOnline. Sensitive information, such as student records and payment transaction information, are secure and protected by TexasOnline. Prior to online implementation, agencies had to contend with the risk of information being tampered with by outside parties when in transit by mail. Transmitting information through TexasOnline ensures that private records are protected with the highest level of security provided by the TexasOnline infrastructure.
- **Online services provide expanded time for license renewals.** For renewal applications, citizens can renew their licenses online on the very last day to renew and still make the agency deadline. If a citizen were to send a renewal via mail, they would have to factor in time for the post office to get the renewal to the agency office in order to get it in before the deadline.
- **Online services offer increased access to government services.** All the benchmarked agencies increased citizens' access to the services by opening up the online channel. DPS has not only made license renewal services available via the Web, but also offers renewals via the telephone with IVR (Interactive Voice Response) service. The use of the IVR service furthers the objective of reaching those who do not have access to the Internet.
- **Online services enable citizens to change address information via the Internet.** Two agencies allow those renewing their licenses online to make address changes as well. As more agencies place address change services online, the number of people who keep their address information up-to-date with the state may increase. This can save the state the costs of mailing information to incorrect addresses.

Lessons Learned

At the printing of this report, federal agencies, state governments, and municipalities were just beginning to develop and implement a formal model for measuring the quantitative benefits from online implementation of government services. Texas has been one of the few jurisdictions tracking the costs and processes of services before and after they were placed online. As one of the trailblazers in this field, Texas had no model to look to and therefore, created its own. This section presents the benefits and challenges of conducting the benchmarking exercise.

Benefits

- **Documenting the agency's processes and resources expended for a particular service allows the agency to examine its own processes and improve on them.** Statistics such as average processing time, turnaround time, service-related expenses, and personnel-related expenses both before and after going online could be tracked specifically to the service and compared accordingly.
- **The benchmarking exercise serves as another avenue for communication between TexasOnline and the agencies.** The benchmarking analysis provided to each agency includes a list of recommendations for the agency to streamline its processes, cut expenses, and/or raise the online adoption rate.
- **The benchmarking exercise serves as another means of tracking the adoption rate of the online channel,** which is useful in determining which channels the agency should concentrate its marketing efforts.
- In cases where the online service costs more than the same service offline, **the benchmarking study forces the agency to examine its needs and processes with the needs of its constituency** in order to improve efficiency and cost effectiveness.

Challenges

- **Determining the cost per transaction was difficult because of state accounting practices.** Agencies do not track expenses and staff resources at the level of detail that the templates request—the service level. Frequently, agencies had to estimate the expenses and staff work hours relating to the service being benchmarked. Therefore, there is some margin of error in the per item costs presented.
- **Documenting the staff devoted to the service was difficult.** The larger agencies have staff in several different departments who may work on processing several different types of

services, including the one being benchmarked. Determining the appropriate amount of time each staff member worked on a particular service proved difficult and was often estimated. In some cases, this may have caused the savings to be over or underestimated.

- **The methodology does not exclude related offline costs in the cost per transaction calculation**, with the exception of the CPA–Sales Tax Filing service. The post-online cost per transaction includes both the online and offline costs associated with the delivery of the service. The methodology did not calculate the cost per transaction for solely an online transaction.
- **The methodology does not calculate the quantitative benefits for the citizen using the online service.** The methodology does not calculate what the citizen may be saving by doing business online vs. traveling to or mailing items to government offices.
- **The cost per transaction calculation is dependent on the number of transactions conducted or expected in a given year.** If the agency does not accurately project the number of transactions in a fiscal year, it can lead to an over or underestimated cost per transaction amount.

Conclusion

This benchmarking study was conducted to determine the quantitative and qualitative benefits of placing government services online as opposed to traditional means of service delivery. The Benchmarking Methodology section described the methods used to measure the benefits of utilizing e-government to deliver services.

The Benefits of E-Government section illustrated the cost-savings realized by other government jurisdictions and the benefits found in Texas—both by the state agencies and the public. The results of the pilot agencies benchmarked in this study confirm that government entities can experience cost savings and time savings when placing services online. While government entities can realize time savings immediately, cost savings are not normally immediate. Opening up another channel of service requires investing some up-front funds for necessary equipment, software, and application development. As the adoption rate for the online service channel grows, the overall cost of delivering that service can be expected to decrease. Streamlining both the offline and online processes required to provide the service further contributes to cost savings, as was demonstrated by one of the benchmarked agencies. The combination of providing the service online, marketing the online service delivery channel, and streamlining agency processes are essential steps for lowering the overall cost of providing the service to the public.

Moreover, agencies have been able to improve service delivery to their constituents. Citizens now have the opportunity to conduct business with the government at their convenience. By improving the level of customer service, agencies are able to focus their attention on serving constituents in the most cost-effective and efficient manner.

Lastly, the Lessons Learned section offered a closer look at the benchmarking methodology to determine the benefits and challenges of the benchmarking exercise. The Department of Information Resources encourages each agency with an application on TexasOnline to benchmark its online transaction cost against conventional costs. Agencies that realize the cost efficiencies of online transactions are encouraged to reinvest those savings to “buy down” the citizens’ convenience fees and subscription fees. In addressing some of the challenges of the benchmarking methodology, DIR encourages governments participating in the benchmarking exercise to work closely with all the departments within their agency in order to obtain the most accurate information concerning staff resources and time spent on processing a transaction. DIR will continue to refine the template to calculate the cost per transaction for an online transaction only, and to quantify the benefits of online services to the citizen. DIR also encourages the TexasOnline Authority to consider how it would like to implement the benchmarking project in the future: to have all applications be benchmarked or to have a selected number of applications benchmarked each year.

As this benchmarking study has shown, there are tangible benefits to placing government services online. Agencies that fully utilize the capabilities that TexasOnline has to offer have seen marked improvements in their own internal processes. This increased efficiency translates into cost

savings for the agency as well as improved service delivery for the citizen. Essentially, by placing services onto TexasOnline, agencies can cater to the changing needs of the citizens that they serve.

Sales Tax Filing Service

Texas Comptroller of Public Accounts

Date of Analysis: July 17, 2002

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DESCRIPTION OF SERVICE

The Texas Comptroller of Public Accounts (CPA) administers the reporting, collection, and allocation of State and Local Sales Tax. Two forms are provided to Texas businesses for reporting: the Short Form Return (single active outlet) and the Long Form Return (multiple locations). The amount of money a business reports determines the frequency with which the business is required to submit a return. Sales Tax is submitted on a monthly, quarterly, and yearly basis. This analysis reviews the processes and costs associated with the both the Short Form and Long Form “Tax Due” returns before and after making the service available online. Please note that an older version of WebFile, CPA’s online tax filing system, allowed businesses to file “No Tax Due” returns online. This study benchmarks the new version of WebFile that allows businesses to file “Tax Due” returns online.

SUMMARY OF TRADITIONAL RETURN PROCESS

Since the pre-implementation benchmark, there have been no changes to the traditional offline process. CPA sends the appropriate tax forms to businesses for submitting their taxes. The table below shows when CPA mails forms to the businesses and when the forms are due back to CPA.

Type of Form	Date Mailed to Taxpayer	Date Due Back to CPA
Monthly	1st of following month	20th of following month
Quarterly	2nd week of the second month of the quarter	April 20, July 20, October 20, January 20
Yearly	December	January 20

Before the online venue, the taxpayer had four options for submitting a tax return: walk-in, TeleFile, EDI (Electronic Data Interchange), or mail. Before “Sales Tax Due” tax forms could be filed online, about 9% of all returns were conducted through walk-ins at CPA’s 34 field offices. First time filers who seek some instruction on how to complete the form usually walk-in to a CPA office. Some walk-ins are taxpayers who have chosen this method to be their regular avenue of filing. Walk-in transactions at a field office are sorted, data is entered, and account maintenance is conducted before forwarding it to the main office for further processing.

TeleFile is the method by which businesses can use a touch-tone telephone to report their taxes. TeleFile is an option for sales tax filers reporting zero sales at all locations with no tax due. Taxes reported through TeleFile are automatically batched into the appropriate databases without staff interference. Two percent of sales tax returns were conducted via TeleFile before online filing of “Sales Tax Due” was available.

EDI is software that large businesses use to electronically submit their tax return data either by dial-up modem or FTP transmittal. Before the online implementation of “Sales Tax Due” only 0.4% of all active sales taxpayers choose to use EDI to submit their tax return, even though the CPA has provided client-based software to perform this function. Tax returns submitted through EDI are scanned by an edit system and if there are any errors or issues, the staff intervenes to correct the exception.

Before the online implementation of “Sales Tax Due” on WebFile, 87% percent of sales tax returns were mailed to the main office and went through a sort and capture process. Once mail was received at the main office, it was sorted by tax type. CPA takes in tax returns for 64 different taxes, sales tax being one of them. The sales tax returns are then sight verified by staff looking for missing data or entry errors. If an error is found, the forms of the document set are manually corrected prior to entry; this usually requires account inquiry. If taxpayer contact is required prior to entry, the document set is tracked and routed to another division to be worked. If there are no errors, the check and payment coupon are separated and prepared for scanning and entry. If the check and payment coupon do not match or the taxpayer has paid a return with more than one check, the document set has to go to a special section for remittance clearing. The data portion of the sales tax returns are forwarded to more advanced editors who check each entry line for correctness and needed codes. All documents are scanned and batched prior to entry. Staff conducts the entry of money for deposits and return data for account balancing. An image of each document and check are exported to the Document Image System to be available for viewing across the agency. The Document Image System creates a roll of microfilm from the images for long-term archive. After entry, the paper documents are housed on wall units, logged, and assigned a retention period. The return and payment data are processed in CPA’s mainframe and any accounts that do not reconcile will be assigned to accounts examiners from other divisions. All payments must be deposited within three business days, and the return data must be entered prior to any allocation or collection scans for the report period.

EXCEPTIONS

Under the traditional process, CPA experiences a number of exceptions in processing a sales tax return:

- If multiple checks are received with one return, staff must complete payment coupons to make them ready for processing;
- If the return is missing information needed for entry, an editor must correct and add what is needed. If critical information is missing, such as taxpayer number, account

research is required and the return may be routed off the floor for taxpayer contact to be made;

- After the return and payment are processed, the data provided may not match all the responsibilities of a specific taxpayer's account. This can cause the return and payment transactions to be flagged, requiring an accounts examiner to review and contact the taxpayer;
- After the return data is entered, the paper document is transported to the retention area where the microfilm is created and verified. If the document image is not good, the paper copy must be pulled and rescanned;
- If the taxpayer overpays the return, a refund is created; and
- If the taxpayer underpays the return, a notice is sent to the taxpayer.

The first two exceptions listed amount to 20% of what is received, and they occur before processing of the sales tax return. Staff spends an average of 1.5 minutes to correct each return; this includes actual hands-on time identifying the problem and resolving it. The last four exceptions listed occur after the sale tax return has been processed and are called "after entry exceptions." Seven percent of all sales tax transactions are after entry exceptions. While there are fewer after entry exceptions, staff spends more time, an average of 5.5 minutes, correcting this type of exception as compared to a "prior to entry exception." The 5.5 minutes includes actual hands-on time identifying the problem and resolving it. However, exception time does not include the time the taxpayer takes to submit missing information or correct an underpayment. Correcting each after entry exception costs CPA \$1.79.

SUMMARY OF ONLINE PROCESS

The process for paying sales taxes using WebFile is similar to the traditional process, in that CPA sends the appropriate tax forms to businesses for submitting their taxes. The difference is that taxpayers can now choose to go online to file and pay their taxes. Once the taxpayer is on the CPA Web site, he or she chooses a filing method, either "Tax Due" or "No Tax Due." Once the method is chosen, the taxpayer goes through the following steps:

- Enters his or her taxpayer information, which the CPA validates.
- Chooses a PIN (personal identification number) and reminder phrase.
- Selects a reporting period.
- Enters the sales tax data.
- If there is a tax due, selects a payment method and pays the tax.

TexasOnline's payment processor, Epay, then validates the payment information and the taxpayer receives confirmation of the transaction completion. The customer has the option to file another return or exit the system. TexasOnline provides financial transaction information to CPA.

EXCEPTIONS

WebFile is designed so that no incomplete transactions are accepted, much less processed. Because of the design, the exceptions associated with the traditional offline process have been eliminated. Because the online service eliminates the traditional offline exceptions, CPA projects to reallocate 1,023 staff hours in fiscal 2002 and 3,925 staff hours in fiscal 2003 to other functions in the agency. These hours translate to \$12,049 in fiscal 2002 and \$46,226 in fiscal 2003 in exception handling savings.

Despite the fact that the offline exceptions have been eliminated among the online transactions, backend exceptions do exist within the online process. Online exceptions take much more time to resolve than offline exceptions. Each online exception takes an average of thirty to forty-five minutes to resolve because CPA must contact the taxpayer, educate them on the issue, and obtain a check to replace any unsuccessful Web payment.

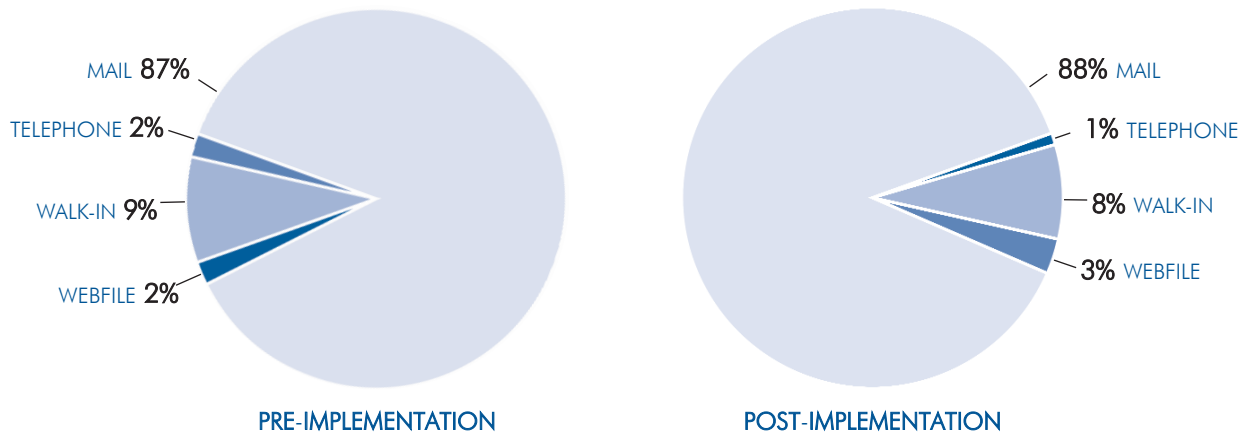
Despite the increased handling time associated with online exceptions, online exceptions are not as common as offline exceptions. As stated previously, the percentage of offline exceptions is high, while online exceptions are very minimal—only 0.005% of online transactions are exceptions. The types of online exceptions are listed below:

- Customer feedback is provided to CPA by way of emails to WebFile Help or telephone calls to the TexasOnline Call Center. CPA staff follows up with the taxpayers to provide customer assistance in completing a transaction.
- Returned ACH (Automated Clearinghouse or electronic check) debits, from financial institutions, when the account number given was invalid or had insufficient funds.
- Disputed credit card payments, where the taxpayer doesn't recall using the credit card to pay sales tax. Only three disputes have occurred since implementation, however, the wording on the taxpayer's credit card statement is being reevaluated for clarity.

In addition to these exceptions, CPA has experienced duplicate filings, where the taxpayer files online and then also mails in a return. So far this has happened infrequently (under 100 duplicate filings to date) and the majority of the duplicate returns were "No Tax Due" returns. Another issue experienced is when TexasOnline's ePay system is down. At these times WebFile Tax Due operations shut down because some type of payment must be included.

With the online implementation of the WebFile "Sales Tax Due," sales tax returns are received through four channels: mailed directly to the agency, walk-ins, telephone (example is TeleFile), and email/fax. The following graph illustrates the transactional distribution between the various channels. The 2% of the WebFile transactions shown in the pre-implementation benchmark are "No Tax Due" filings and EDI filings. The WebFile transactions shown in the post-implementation benchmark include "No Tax Due" filings and the projected "Tax Due" filings that the new online channel provides. Since the pre-implementation benchmark, the mail channel and WebFile each increased in transaction volume by 1%, while both walk-in and TeleFile were each reduced in the number of transactions by 1%.

Shift in the Number of Sales Tax Filings Received Through Each Service Delivery Channel



PERSONNEL

The personnel dedicated to CPA's Sales Tax processing has not changed with the implementation of online filing of "Sales Tax Due." CPA's document processing pipeline has 111 full-time equivalents (FTEs) and 40 temporary employees dedicated in part to the sales tax return process. In total, these 151 employees work in the Revenue Processing Division. Sales Tax returns account for 69% of all returns that are processed in the Revenue Processing Division. An average of 834 staff hours are spent on Sales Tax each working day. This is equivalent to 77 FTEs and 28 temporary employees.

TRANSACTIONS

More than three million sales tax returns are processed each fiscal year. The average processing time for each offline tax return has not changed between the pre and post benchmark; it remains just under seven hours. However, average processing for WebFile is instantaneous. Staff does not spend time on processing the WebFile transactions because the tax filer inputs all the data and the online system automatically processes them. In contrast, one offline transaction takes on average, almost seven hours to process. Turnaround time for offline transactions does increase during peak periods; however, all remittances are sent to the Treasury within three days as mandated by law. Like average processing time, the average turnaround time is instantaneous for WebFile. While offline transactions take almost three business days to turnaround from mail receipt to entry, WebFile transactions are posted upon submission by the taxpayer.

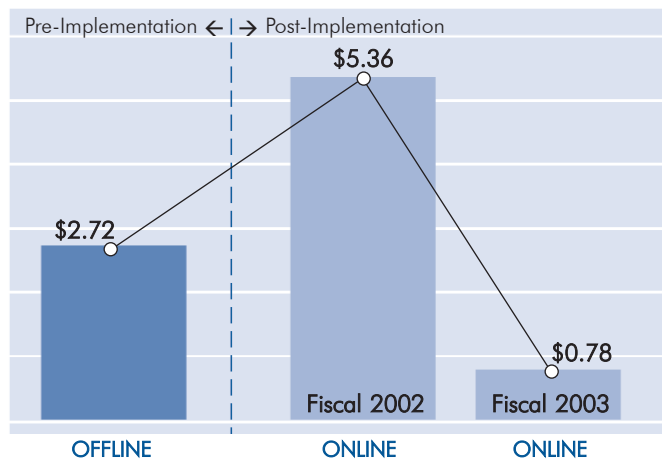
CPA experiences peak periods for sales tax returns from the 20th of the month to the 5th of the next month. This is because all sales tax returns, whether monthly, quarterly, or yearly, must be postmarked by the 20th of the month. The number of returns submitted to CPA increases by 80% during peak periods.

WebFile demonstrates the natural cost cycle when adding a new method of service delivery. Before the new WebFile system was implemented, which accepted “Sales Tax Due” filings, sales tax filers could file their taxes through mail, walk-in, EDI, and telephone. The cost per transaction for a purely offline transaction is \$2.72.

CPA projected that a purely online transaction in fiscal 2002 costs CPA \$5.36 due to the application development fees (paid for in fiscal 2002) and the low adoption rate. However, CPA projects that the cost for a purely online transaction will fall to \$0.78 in fiscal 2003. The main reason for the reduction in cost per transaction is the adoption rate. The number of taxpayers using WebFile has grown steadily since implementation, but increasing awareness and participation has been slow. The 77th Texas Legislature passed SB 640, requiring all sales tax filers who report \$100,000 or more annually to file and pay electronically. The new law comes with encouragement, because not complying could result in a 5% penalty of taxes due. CPA conservatively projects that the adoption rate of WebFile will rise from 3% to 11% in fiscal 2003.

CPA – SALES TAX FILING SERVICE

Comparison of Cost Per Transaction by Service Delivery Channels



BENEFITS

This study asked CPA to evaluate what qualitative benefits were important before going online and whether such benefits were achieved after online implementation. Customer Service benefits ranked high in importance. The following benefits were deemed as somewhat important to very important and were rated as achieved in reference to the Sales Tax service.

- **Customer Service**

- Faster turnaround time at the agency.
- Faster turnaround time by eliminating mail time to and from the agency.
- Enhances public access and service delivery. Service and information is available 24 x 7 from any location instead of 8-5 M-F.
- Reduced travel time and expenses for the customer receiving the service.
- Convenience of paying online.
- Provides “one-stop-shopping” for government services and reduces the need to send duplicate information to multiple locations.
- Increases customer awareness of agency programs and services.

- **Data Accessibility**
 - Provides accurate information.
 - Provides easy access to query and update information from any location.
 - Allows for the gathering of statistical service information.
- **Re-Engineering Opportunities**
 - Reduces internal processing time.
 - Reallocates staff to more qualitative work.
 - Ability to offer service in expanded number of locations without disbursing staff
 - Provides an infrastructure upon which subsequent services could be added.
 - Reduces internal processing time.
 - Process funds more timely.
 - Allows for standardized privacy policies.
- **Other**
 - Allows the customer to file a tax return prior to the due date and set the payment transfer date on or before the due date.
 - Interest earned on tax dollars—Because WebFile only allows for timely payments, the tax dollars are being deposited into the Treasury sooner. Most taxpayers mail their returns on the due date, and with one to three days of postal service time, the money arrives at CPA later and must then be handled and keyed in for entry. WebFile gets the money into the Treasury and with little or no intervention.

RECOMMENDATIONS

1. CPA should consider adding script to the last online confirmation page, after the citizen has completed the transaction, stating that the tax return has been received and processed. The script should also ask citizens to not file the same return by mail or walk-in if they have completed the online return process.
2. Since 88% of the tax returns are submitted by mail, CPA should continue to use mail inserts as an effective, low-cost marketing strategy for WebFile.
3. CPA should continue to have a brief message played while taxpayers are on hold at the CPA's Tax Assistance department and on the TeleFile system in order to reach the taxpayers currently not using WebFile to submit their tax return.
4. CPA should continue having staff at the taxpayer service and enforcement field offices to either mention WebFile verbally or hand out a WebFile flyer to encourage future participation.
5. CPA should include a demonstration of WebFile at each taxpayer seminar, which is held periodically for the public.

Texas Tomorrow Fund Initial Application

Texas Comptroller of Public Accounts

Date of Analysis: July 1, 2002

Contact: Zulay Sanchez, 512-463-4863, zulay.sanchez@cpa.state.tx.us

DESCRIPTION OF SERVICE

The Texas Comptroller's Office (CPA) administers the Texas Tomorrow Fund (TTF). TTF is a fully guaranteed prepaid tuition program that secures a child's college education by locking in the cost of tomorrow's tuition and required fees for today's prices. The Texas Tomorrow Fund is a constitutionally guaranteed trust fund backed by the full faith and credit of the State of Texas.

This analysis reviews the post-implementation initial application processes and costs associated with TTF only.

SUMMARY OF TRADITIONAL APPLICATION PROCESS

The traditional, offline process has changed since the pre-implementation benchmark. The new system, Banner, was implemented on September 1, 2002. Banner is a total integrated client server system that has greatly assisted CPA in streamlining its manual process. The process of completing a TTF initial application is as follows:

Prospective participants request information from CPA. Within five to six working days, CPA mails the application material to prospective participants. The participant mails the application and registration fee to Treasury Operations Lock Box (Lock Box). Once the TTF program office receives the applications from Lock Box, they are imaged and pushed through Banner. TTF staff reviews the applications to ensure that all the fields were captured correctly and accepts the application. Once the applications are approved, Banner automatically produces the enrollment welcome kits and stuffs the material for mailing. The average processing time per offline application has remained constant at 10 minutes, since the pre-implementation benchmark. The average turnaround time for processing an initial TTF application is four to five working days. During peak periods, the turn around time increases to six to ten days.

Note: Average processing time per transaction is the cumulative "hands-on" time it takes the entire staff to complete a transaction from the time it is received for processing through the time the transaction is completed or fulfilled. *Average turnaround time* is measured from the time that the enrollment application is received in the mail to the time that it is mailed to the applicant.

Under the traditional process, CPA experiences a number of exceptions in processing a TTF application:

- Return of the enrollment welcome kits due to incorrect data entry;
- Return payments due to insufficient funds, bad credit cards, or bogus checks;
- Incomplete applications; and
- Calls from purchasers checking on the status of the application—if the purchaser does not receive the enrollment packet within four to six weeks, the staff receives a phone or an email inquiry.

Note: Exceptions are those tasks that occur outside of routine processing or cause processing of the enrollment application to stop temporarily.

Staff time spent on correcting each exception has not changed since the pre-implementation benchmark—it remains an average of 30 to 60 minutes. This time includes actual hands-on time identifying the problem and mailing a letter, but does not include customer turnaround time. However, the implementation of the online channel and Banner has contributed to the decline in exception handling by 5%.

SUMMARY OF ONLINE APPLICATION PROCESS

The purchaser accesses the Texas Tomorrow Fund Web site and enters the required information to apply for a prepaid tuition contract and pays the \$50 application fee. TexasOnline's Epay provides detailed financial transaction data files to CPA and Treasury. The TTF program office receives a detailed file of the financial transactions. The trace number, account number, and amount of any exceptions are captured in the report. TTF staff reconciles the number of transactions processed to the report produced internally. Once the applications are accepted and completed, Banner automatically produces enrollment welcome kits and the program staff stuffs the material for mailing.

The average processing time of an online transaction is half that of an offline transaction. The average turnaround time for processing an online initial TTF application is two working days. The online process gets an enrollment packet to the purchaser in half the time that it takes the traditional process because processing time and turnaround time for online transactions are reduced with an online transaction.

CPA reports not having experienced any exceptions for the online application process. If any portion of the information is incorrect the user is prompted to make the correction before completing the transaction with a credit card payment. The online application requires a valid credit card number to process the online enrollment. The design of the online application has made it impossible for incomplete transactions to be accepted, much less processed. This has contributed to the reduction in the percentage of time staff spends on correcting exceptions.

PERSONNEL

In the pre-benchmark, CPA had eight employees who were dedicated in part to the TTF initial application process. The eight employees handled administrative tasks, customer services, and data

entry. A total of 59 staff hours per day were spent on the TTF initial application process. CPA also had six temporary workers on staff to work a total of 720 hours per year at \$9.75 an hour.

The online implementation of the initial TTF application and the implementation of Banner have brought staff reductions to the initial TTF application service. The eight employees have been reduced to five. The staff time dedicated to this service has decreased by 81%. CPA has also reduced the need for temporary workers by 61%.

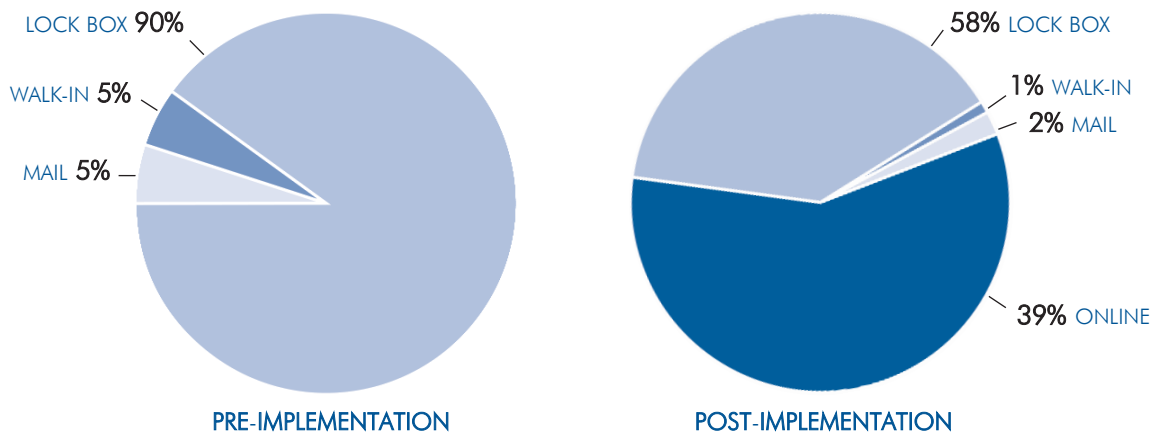
TRANSACTIONS AND QUERIES

CPA projects an 8% decrease in the total number of TTF initial applications processed between fiscal 2001 and fiscal 2002. However, CPA hopes to meet or exceed its projection for fiscal 2002. CPA experiences peak periods for the TTF initial application during the following times: at the end of the calendar year, the end of an enrollment period, and the end of newborn enrollment (end of the fiscal year). CPA experiences a 95% increase during peak periods. Since the implementation of the online channel and Banner, the number of queries received by CPA has increased by 13%. It is unknown as to why there is an increase in queries. Each query, whether it concerns an online transaction or an offline transaction, requires approximately one to two days to research and resolve. Average turnaround time for an online query is one to two days, while turnaround time for an offline query is four to six days.

TTF initial applications are received through four channels: mailed directly to the agency, walk-ins, Lock Box, and Online. In the pre-implementation benchmark, 90% of initial applications were received through the Lock Box. The online channel has relieved Lock Box of 39% of its transaction volume. The graphs below illustrate the shift that prospective participants are making from mailing in an application to Lock Box to conducting their application online.

CPA – TEXAS TOMORROW FUND INITIAL APPLICATION

Shift in the Number of Initial Applications Received Through Each Service Delivery Channel



COST PER TRANSACTION

The cost per transaction pre-implementation benchmark was \$48.86. The costs associated with Banner were factored into the cost per transaction. If the cost of the new system were not factored in, the cost per transaction would be \$43.90.

Opening up the online channel and implementing Banner has decreased the cost per transaction to \$36.47. The 25% decrease in the cost per transaction can be attributed to staff reductions of both state employees and temporary workers. The 81% reduction in state employee staff time and the 61% decrease of temporary workers dedicated to the TTF initial application translates to a decrease in personnel expenses by 83%.

BENEFITS

Before CPA implemented the online channel for TTF, it ranked Customer Service benefits as highly important. CPA listed the benefits below as somewhat important to very important in reference to the TTF service. The data provided in the post-implementation benchmark determined that the benefits CPA found important were achieved:

- **Customer Service**
 - Faster turnaround time at the agency.
 - Faster turnaround time by eliminating mail time to and from the agency.
 - Enhanced public access and service delivery. Service and information is available 24 x 7 from any location instead of 8-5 M-F.
 - Customer has reduced travel time and expenses associated with receiving the service.
 - Customer will be able to determine what materials are needed to file an application before coming into the office.
 - Convenience of paying online.
 - Provides “one-stop-shopping” for government services and reduces the need to send duplicate information to multiple locations.
- **Data Accessibility**
 - Accurate information provided.
 - Allows for the gathering of statistical service information.
- **Re-Engineering Opportunities**
 - Reduce internal processing time.
 - Reallocate staff to more qualitative work.
 - Process funds more timely.
 - Provides interfaces to other internal systems to improve access to information.
 - Allow for reengineering opportunities.
- **Other**
 - Reduces the number of staff processing applications.

RECOMMENDATION

The Authority is pleased with the cost savings that has occurred as a result of the implementation of both Banner and the online channel of service delivery. The Authority encourages CPA to continue marketing the online TTF initial application service in order to increase the adoption rate and experience further cost savings for this application.

Information Distribution

Texas Education Agency Public Access Initiative

Date of Analysis: October 16, 2002

Contact: Belinda Dyer, 512-475-3451, bdyer@tea.state.tx.us

DESCRIPTION OF SERVICE

TEA provides two types of data to Texas school districts: the Longitudinal Student Performance Record (LSPR) and the Career & Technology Education (CATE) training program data. The LSPR is a detailed extract file generated from the PEIMS/TAAS database. It contains student test results and is subject to the Family Educational Rights and Privacy Act (FERPA) rules. These test results are used by school districts to match student performance with teacher performance and target subject areas that are difficult for students. The CATE follows up with high school graduates to measure the success of the federally funded vocational training they received in high school. TEA made LSPR and CATE available online in October 2001.

SUMMARY OF PROCESS

Before online implementation of the LSPR and CATE information distributions, TEA mailed out the information on CDs. The vast majority of the tasks associated with this process were outsourced. The outsourcer conducted all the file preparations, CD creation, and actual mail out. The only tasks conducted by TEA were receiving the file requests from the school districts and forwarding those requests to the outsourcer.

The offline process had very few exceptions associated with it:

- In emergencies, the data was sent overnight to aid a school district in meeting local deadlines;
- Another copy of the CD was needed by a school district due to loss or damage; and
- No signature or incomplete information on the request.

In the first two cases, TEA received and forwarded the request to the outsourcer. The last case was very rare and required minimal time from TEA staff to call the school district to verify the request and receive the necessary faxes to correct the error.

TEA is the first agency to utilize Public Key Infrastructure (PKI) in the implementation of its online service. TEA has chosen to use PKI to protect the LSPR and CATE information. This information is especially sensitive because it pertains to the personal information of students, which are protected by law.

Note: A PKI enables users of a basically unsecured public network such as the Internet to securely and privately exchange data and money through the use of a public and a private cryptographic key pair that is obtained and shared through a trusted authority.

The online process of accessing the data is as follows:

- TEA purchases digital certificates for all school districts receiving this data.
- TEA notifies the school districts that the digital certificate registration is ready to be accessed online.
- The school district accesses TexasOnline and registers for a digital certificate.
- TexasOnline then sends the information to TEA for verification of the digital certificate.
- TEA verifies that the person requesting the information is an authorized employee of the school district and is requesting the information for the correct school district.
- TEA then approves the school district's request for the digital certificate so that the school district can access their information on the Internet.
- The school district accesses TexasOnline to download their digital certificate.
- In addition, TEA installs a copy of the certificate on their workstation in case it needs to be reinstalled by the school district at a later date.

These last two steps take ten seconds per transaction to complete.

There have been a few exceptions associated with the online implementation of LSPR and CATE access. School districts have experienced errors in submitting a request for a digital certificate:

- Sometimes the request will not submit, an error code is received, or the drop down menu is not populated.
- Some school districts have had trouble downloading and installing the digital certificate.
- Other school districts have had issues downloading the actual data. They have received messages saying that they are not authorized to access the data or in some cases the download is complete, but no data is shown.

In all these cases the school district calls TEA for a resolution or requests for TEA to mail them CDs with the information. Approximately 15% of online information requests are exceptions and 20 minutes are spent handling each exception.

PERSONNEL

As stated previously, the majority of TEA's offline process was outsourced. TEA had only two Systems Analysts who worked on the service minimally by answering email and phone calls, handling exceptions, and forwarding requests to the outsourcer. The amount of time TEA employees spent on the service was so minimal (20 minutes a month) that the personnel costs were insignificant when calculating the cost per transaction.

Note: In the case of TEA, a “transaction” is defined as the request made by a school district for the LSPR or CATE data whether it be by CD or online. Once the information is distributed by TEA, it can be accessed several times. For this reason, analysts are defining a “transaction” as the initial fulfillment of a request to gain access of the data.

With the implementation of the online process, personnel costs increased slightly. In fiscal 2002, TEA had a Director and two Systems Analysts who were dedicated to the service for a total of 1.75 hours over a two-month period. This service is only provided twice a year. The number of online exceptions partly contributes to the rise in staff hours. When a school district had trouble accessing the information online, they had the opportunity to request the information on a CD. These requests have contributed to the increase in staff hours, since TEA no longer outsources CD preparation and mailing.

TRANSACTIONS

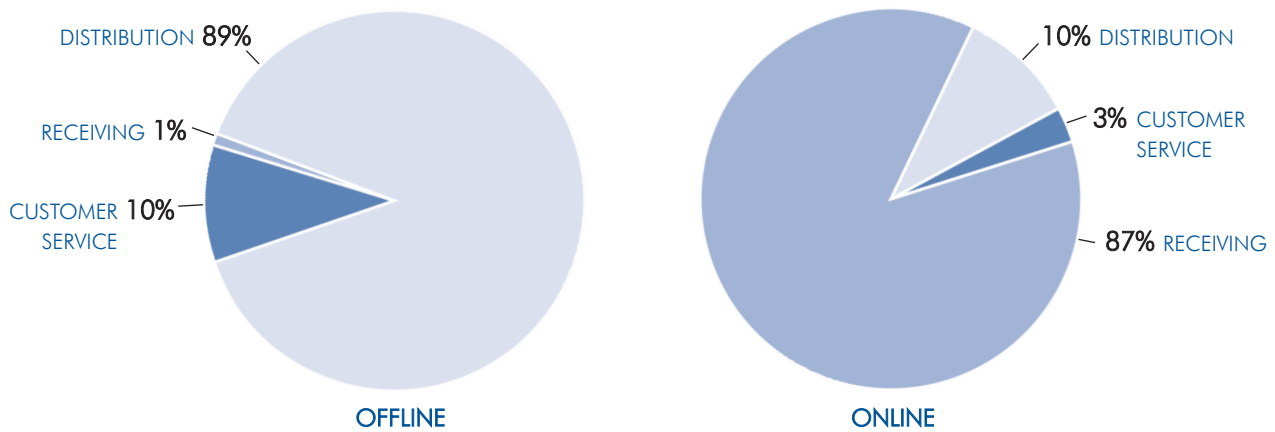
Before school starts each year, TEA notifies the school districts that the LSPR and CATE information is ready for distribution. Within the first three months of notification, the period from August through October, TEA receives more than 80% of its yearly requests.

In the post-implementation benchmark, TEA received a total of 806 online requests and 103 offline requests for either the LSPR or the CATE data, which translates to an online adoption rate of 87%. Average processing time and turnaround time for both the online and offline channels have decreased significantly since the implementation of the online service delivery channel. The average time it takes to process an offline transaction has decreased from 30 minutes to 20 minutes since the online implementation. In contrast, the average processing time for online information requests is more than 90% faster than the post-implementation offline requests. Likewise average turnaround time per offline transaction has decreased from one to five days to just one day since the online implementation. Average turnaround time per online transaction is two hours—75% faster than the turnaround time of a post-implementation offline request. When comparing the time dedicated to LSPR and CATE information distribution, online transactions take much less time to process and turnaround.

Note: *Average processing time per transaction* is the cumulative “hands-on” time it takes the entire staff to complete a transaction from the time it is received for processing through the time the transaction is completed or fulfilled. *Average turnaround time* for online requests was measured from the time that the school district registers for a digital certificate to the time that they download/receive the data. Average turnaround time for offline requests was measured from the time that TEA receives the request via telephone or mail to the time that TEA mailed out the CDs.

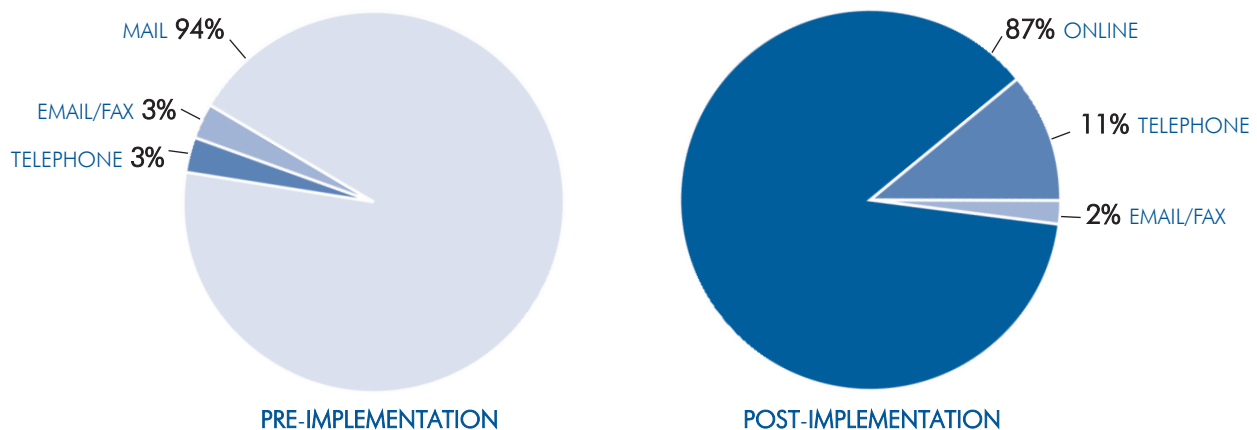
The distribution of staff time spent on various activities varies between the online and offline distribution channels. For both channels, minimal time is spent on customer service. In the customer service activity, TEA answers questions like, “How do I use the information?” or “How do I import the raw data into Excel?” or “Can I get another copy of the information on CD?” As the following graph demonstrates, the majority of staff time for online requests is spent on receiving certificate requests, while the majority of staff time for offline requests was spent on distributing CDs.

Shift in Distribution of Staff Time Spent on Processing-Related Activities



As the following graph illustrates, 94% of the requests were mailed directly to the agency before online implementation. Telephone and email/fax requests each accounted for 3% of total transactions. All requests were forwarded by TEA to the outsourcer. With the implementation of TexasOnline, 87% of all requests are conducted online, while 11% are taken via telephone and 2% are emailed or faxed to TEA. The adoption rate for the online distribution of LSPR and CATE data is very high considering that it is only in its first year.

Shift in the Number of Information Requests Received Through Each Service Delivery Channel



COST PER TRANSACTION

The cost per transaction pre-TexasOnline implementation is \$35.12. The cost per transaction post-TexasOnline implementation rose to \$241.86. The rise in service-related expenses was the major factor in the increase in transaction cost. Seventy-seven percent of all service-related expenses listed in the post-implementation were “start-up costs.” These are one-time expenses related to developing the online application, such as development costs, PKI set-up fees, hosting fees, and hardware costs. Start-up costs are not the only reason for the high cost per transaction in the post-implementation benchmark. TEA is required to purchase a digital certificate for each participating school district at a cost of \$25 per certificate. This amounts to an annual cost of \$16,250 to \$31,425 depending on how many school districts participate in online access of LSPR and CATE.

Unlike other online applications, the online adoption rate and staff expenses are not significant factors in lowering the cost per transaction. The online adoption rate is very high in the first year—87%. In addition, the staff time spent on this service was very minimal in both the pre- and post-implementation benchmark. The high cost per transaction is caused by the annual costs of the digital certificates and the maintenance fees associated with PKI.

After reviewing the initial findings of this analysis, TEA and TexasOnline explored more inexpensive, yet effective ways of transmitting LSPR and CATE information. TEA will now use the password/PIN (personal identification number) method of allowing access to data for authorized users. The online process to be used in fiscal 2003 assigns a password and PIN to the authorized representative(s) of the school district. The authorized representative(s) of the school districts would be the only person(s) able to view and download the data. The password/PIN method is used in most of the applications on TexasOnline as a secure way to provide access to sensitive data. The projected cost per transaction in fiscal 2003 using the password/PIN method is \$30.05. The cost per transaction was reduced by 14% from the pre-implementation benchmark. The cost per transaction is reduced with the use of the password/PIN method since procuring digital certificates for each school district is no longer necessary. The password/PIN method should also reduce the number exceptions, since most of the online exceptions involved the use of digital certificates.

BENEFITS

The benchmarking templates asked TEA to evaluate what qualitative benefits were important to them before going online and then what benefits were achieved after going online. Customer service and re-engineering opportunities ranked high in importance to TEA.

Improving customer service was one of the primary reasons for making the LSPR and CATE scores available online. As previously stated the LSPR test results are used by the school districts to match student performance with teacher performance and target subject areas that are difficult for students. The online version of the LSPR data is accompanied by three downloadable pre-formatted reports that include the student level of the school district and graphs. These reports were not available with the CD version. These reports have been so well received that TEA is

making similar reports available with the CATE data. As stated previously, the CATE follows up with high school graduates to measure the success of the federally funded vocational training they received in high school. The online version of the CATE data includes a downloadable instruction sheet and data tips on how the school districts can use and analyze the data. The instruction sheet and data tips have been so well received by the school districts that TEA is making them available with the LSPR data. Moving the data distribution online has allowed TEA to expand their product lines to better serve the school districts. Another customer service related benefit for having the data available online is that school districts have access to the data when they need it, instead of having to wait for a request to process and a CD to be mailed to them.

Because the information sought by the school districts is sensitive and protected by federal law, TEA ranked secure transmission of the records as very important. TexasOnline and TEA have worked together to create a security system, which allows for the secure transmission of LSPR and CATE information via the Internet. The pre-implementation process had the risk of CDs being lost in the mail and potentially being tampered by outside parties. The online process to be used in fiscal 2003 is more secure in that only the authorized representative(s) of the school district can view and download the data. In addition to these benefits, TEA has developed an infrastructure and security system that can be used by all subsequent TEA online applications.

Agent License Renewal

Texas Department of Insurance

Date of Analysis: July 1, 2002

Contact: Matt Ray, Deputy Commissioner for Licensing, 512-463-8917,
matt.ray@tdi.state.tx.us

This is the second post-benchmarking analysis conducted for the Texas Department of Insurance's (TDI's) Agent License Renewal. The data used in this analysis was gathered in February 2002, approximately one year after placing the service on TexasOnline and six months after completing the first post-implementation benchmark.

SUMMARY OF TRADITIONAL RENEWAL PROCESS

Since the last post implementation data gathering in June 2001, there have been no changes to the traditional non-online process. TDI prints and mails license renewal notices to insurance agents. The agents then mail the renewal with payment to the Treasury Lock Box (Lock Box) for payment processing. Those renewals that are conducted on a walk-in basis are forwarded to Lock Box for payment processing. After the payment is processed, the renewals are delivered to TDI and the Information Services (IS) Division loads the data into cash receipts and the licensing databases. The Accounting Division (Accounting) records daily revenue transactions. The Licensing Division then enters any renewal exceptions in the databases, prints the licenses, and mails them out to the insurance agents.

The online service makes it possible for agents to make address changes and to renew licenses. This has caused a change in process for TDI. KPMG Consulting retrieves agent data and FTPs address changes to TDI. Once TDI receives the address changes, it must manually enter the changes in the database before the licenses are printed and mailed out. TDI may consider having an interface developed between the two systems to reduce the manual resources used and the potential for errors.

SUMMARY OF TEXASONLINE RENEWAL PROCESS

The process for renewing a license using TexasOnline is somewhat similar to the pre-implementation process, in that TDI must still print and mail out the renewal notices. However, instead of mailing the renewal or visiting the agency to renew the license, the agent can renew the license online. Once the license is renewed online, TexasOnline sends the transaction through ePay, Global Payment Services (the bank that handles the state's credit card transactions), and the Treasury. The Treasury processes payments and sends a credit card (ePay) file to TDI. TDI's IS Division must run a job that combines the ePay and renewal data files, removes failed and missing files, and loads the credit card data into cash receipts. Since the last post analysis, the online process has only experienced one change—once a day, the Accounting Department records the

convenience fee revenues and expenses in order to transfer funds. This process takes ten minutes. After this step the Licensing Division processes any refunds, and prints and mails the licenses.

Before going on TexasOnline, TDI reported nine exceptions that occurred in processing transactions. These exceptions still exist, since the agency still takes in renewals via walk-in and Lock Box Operations.

Note: *Exceptions* are those incidents that cause processing of the renewal to be delayed or stopped.

However, the nine exceptions associated with the offline transactions are non-existent among the online transactions. In the first post-implementation benchmark data, TDI reported that there were five exceptions for online transactions. Over the past six months, TDI and TexasOnline were able to work together to bring the number of online exceptions from five to three. The three remaining online exceptions are as follows:

- TDI may receive a file containing the wrong day's data, resulting in duplicate records and missing records.
- TexasOnline data may not show a renewal as having been transacted due to the problem in the previous bullet.
- Credit card refunds—Refunds are conducted in cases where the licensee renews by both check (offline) and credit card (online). TDI has received one request for a credit card refund from a card company whose customer disputed the charge. TDI staff spent approximately four hours researching this dispute. This is the first dispute that TDI has had to handle. TDI projects that as they gain more experience in dealing with credit card disputes, the processing time of this exception will decrease.

The overall percentage of exceptions that TDI has had to correct has decreased from 11% to 3%. Based on the data collected thus far, TDI should see a dramatic decline in time spent on exceptions, as more agents renew their licenses online.

PERSONNEL

When the Agent License Renewal service was placed online initially, TDI made changes to the staff devoted to the Agent License Renewal service. At that time, three Systems Analysts, two Insurance Specialists, and a Programmer were delegated to this service. This brought the total number of employees dedicated to the Licensing Renewal service to eighteen. These eighteen employees spent approximately 23% of their total time working on this renewal service. Total time these employees spent on the renewal service increased by 1.4% after going on TexasOnline.

Note: The first post benchmark data had erroneous data in it concerning the number of employees. This analysis reflects the changes made to the data.

The data gathered in February 2002 indicates that several employees are no longer dedicated to the Agent License Renewal service. An Administrative Technician, a Programmer II, a Systems Analyst IV, and a Programmer III are now dedicated to other functions in the agency. However, the

Agent License Renewal has replaced these employees with a Systems Analyst II, a Program Administrator III, and a Database Administrator. The total number of employees working on this service is now fifteen. TDI believes that the changes in Information Services (IS) staff dedicated to the service is due to the fact that they are now tracking specific tasks more accurately. The IS personnel information provided in previous benchmarks were derived using a formula that estimated the time spent on specific work, since TDI did not track such information previously.

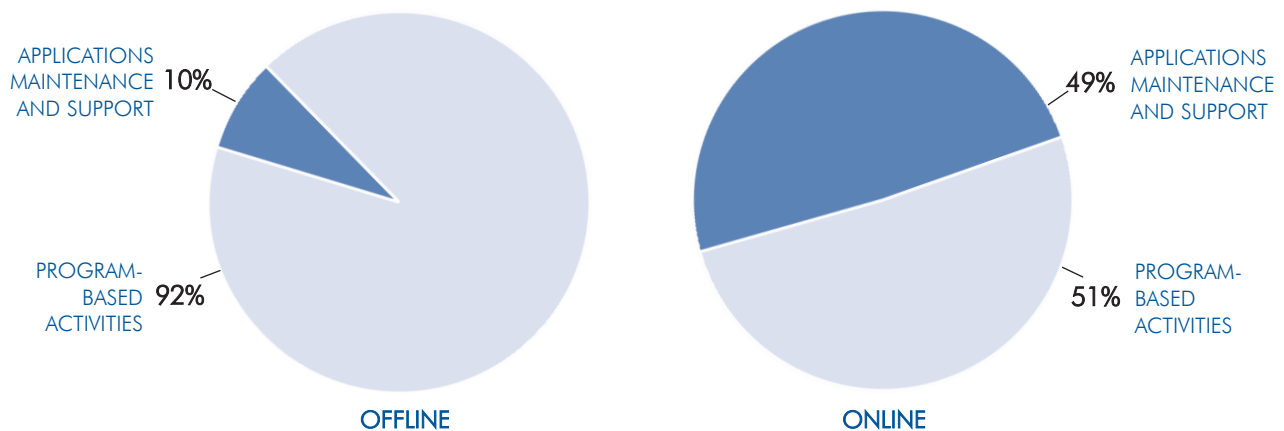
Despite the fact that fewer employees are working on the Agent License Renewal, the total staff hours dedicated to the service has increased by 14%. In addition to the TDI tracking IS staff hours more accurately, the increase in staff hours can also be attributed to the fact that TDI is experiencing a peak year for the Agent License Renewals.

ACTIVITIES

As a part of the benchmarking exercise, TexasOnline asked TDI to estimate the percentage of time its staff spends per day performing the following activities both online and offline: receiving, accounting, distribution, customer service, program activities, application maintenance and support, and filing and archiving. The following graph shows the TDI staff time spent on program activities and on application maintenance and support.

Note: A *program* is a category of activity including processing, validation, data entry, record keeping, exceptions, audit, open records requests, and task completion. *Program activities* consist of processing, validating, data entry, record keeping, correcting exceptions, auditing, and completing open records requests. *Application maintenance and support* consists of software/hardware modifications, upgrades, and system operations.

TDI – AGENT LICENSE RENEWAL SERVICE
Shift in the Distribution of Staff Time Between Program-Based and Application Maintenance Activities



Although agent license renewals require staff to spend a minimal amount of time on accounting, the majority of time is spent on program-related activities and application maintenance and support. As expected, more time is required for program activities for offline

transactions than for program activities for online transactions. The previous graph shows that over 90% of the total amount of staff time spent supporting offline transactions is spent on program-related activities. In comparison, 46% of total staff time spent supporting online activities is spent on program-related activities. In addition, minimal time is spent on the maintenance and support of legacy systems, which are used for the offline transactions, while more than half of staff time is spent on supporting online transactions.

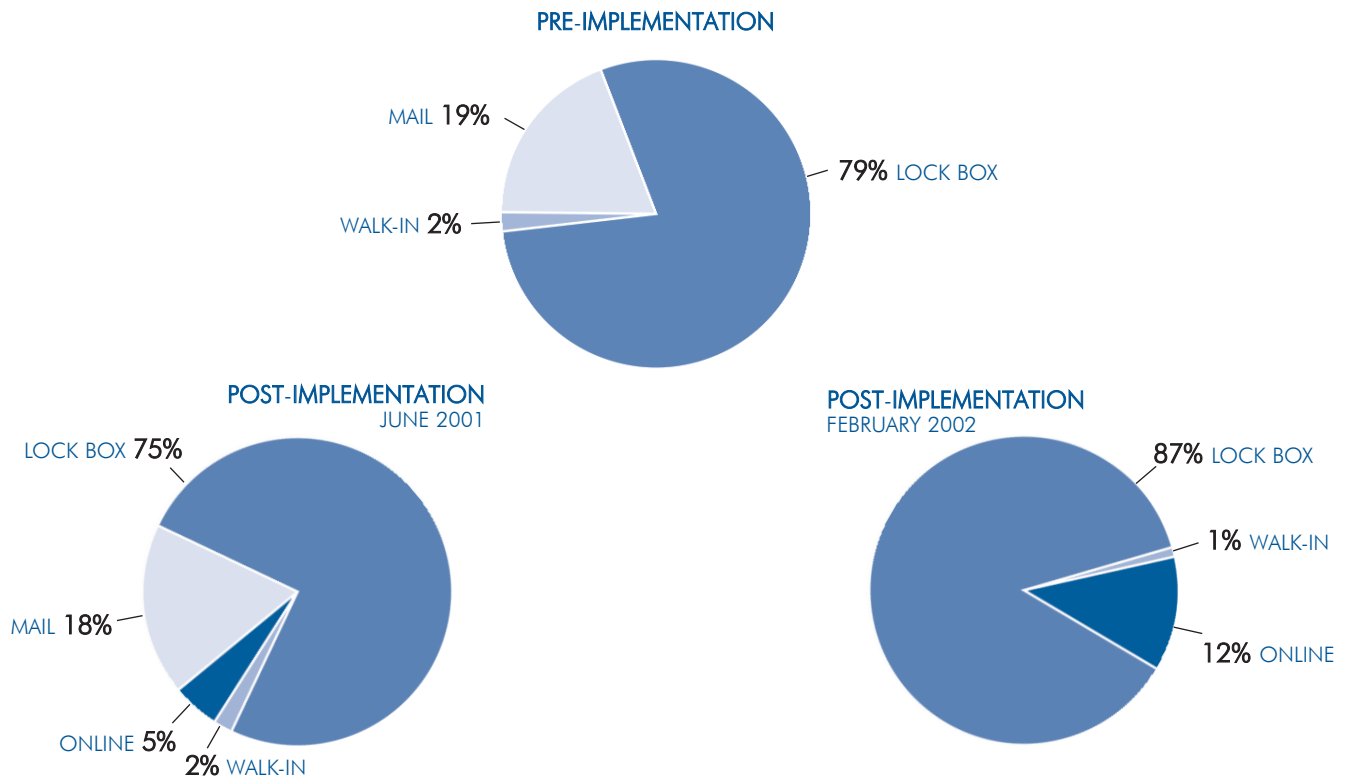
TRANSACTIONS

TDI's licensing renewal peak period occurs during even-numbered years. Historically there has been a 22% increase in transactions during peak periods. Because the total expenses for the two years were similar, the average transaction volumes over the two years was used to calculate both the "pre" and "post" cost per transaction. The average transaction volume used for fiscal 2002 and fiscal 2003 is 146,957.

The initial online transactions occurred during five months in fiscal 2001 (a non-peak period). TDI projected that about 8.4% of transactions would be conducted online during fiscal 2001. This expectation was met—8.02% of agents renewed their licenses online. Five months into fiscal 2002, TDI reports that almost 12% of the transactions to date have been conducted online. TDI expects that this rate will continue for the rest of the fiscal year. The following graph shows the adoption rate of the various methods of renewing an agent's license.

TDI – AGENT LICENSE RENEWAL SERVICE

Shift in the Number of Renewals Received Through Each Service Delivery Channel



Although the above graph shows that TDI does not receive renewals via mail, in actuality they do receive mailed renewals at the agency. However, TDI forwards these to Lock Box for processing and therefore has categorized them as Lock Box renewals. The percentage that the agency previously categorized as “Mailed to Agency” has been included in the “Lock Box” category. This accounts for the decline in renewals coming in as “Mailed to Agency” and the increase in renewals processed through the “Lock Box.”

The average processing time for an online transaction has remained slightly less than the processing time for an offline transaction. Although hands-on processing time is slightly less for online vs. offline, the average turnaround time for both processes is the same—four days.

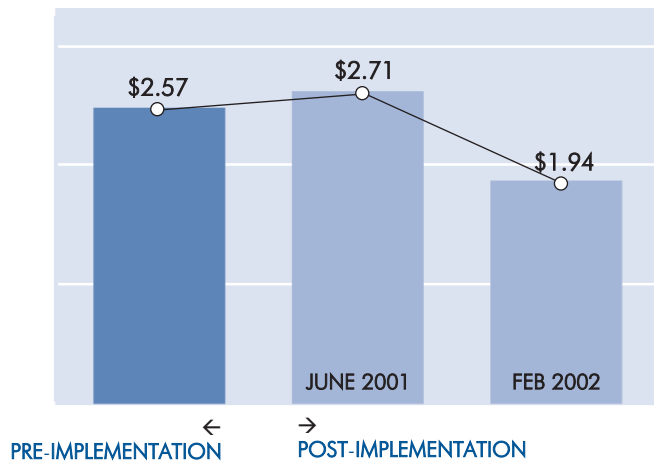
Note: *Average processing time per transaction* is the cumulative “hands-on” time it takes the entire staff to complete a transaction from the time it is received for processing through the time the transaction is completed or fulfilled.

COST PER TRANSACTION

Cost per transaction has changed dramatically since the first post-implementation benchmark. The combined post-implementation cost per transaction, which includes both online and offline channels, is \$1.94. The cost per transaction decreased by 25% since the pre-implementation benchmark with only a mere 12% percent adoption rate for fiscal 2002.

In the first post-implementation analysis, there was a 5% increase in the cost per transaction. This was due to the fact that TDI was providing a new method of service delivery to the citizen in addition to the traditional methods. Development costs absorbed by TDI were the largest service-related expense accounted for in the increase in per transaction cost. In adding this new delivery channel, additional staff time was devoted to the Licensing Renewal service. A Systems Analyst V was dedicated to the service and the man-hours dedicated by IS staff also increased. On average, the IS positions are higher salaried than others, thus accounting for some of the increased costs. The following graph demonstrates the dramatic changes in cost per transaction.

TDI – AGENT LICENSE RENEWAL SERVICE
Comparison of Cost Per Transaction



The post-implementation calculations in the graph previous show the combined cost per transaction for all online and offline transactions. The results of this study confirm the natural cost cycle when adding a new method of service delivery. In June 2001, TDI was still absorbing the both the service-related expenses and personnel costs of adding a new service delivery channel. The major reason for the decrease in cost per transaction is the increase in the number of projected agents renewing their licenses.

Because TDI experiences a 22% increase in the number of transactions they process during even-numbered years, the average of a peak year and non-peak year was taken, so that the increase during the peak years would not skew the cost per transaction. The average used for fiscal 2000 and fiscal 2001 was 94,065 transactions. The average used for fiscal 2002 and fiscal 2003 was 146,957 transactions. The average number of transactions grew by 56%. This growth was pivotal in lowering the overall cost per transaction.

BENEFITS

Before TDI implemented its licensing renewal service online, the agency listed better customer service and opportunities to re-engineer/share data with other departments as “somewhat” to “very” important.

After implementing the service on TexasOnline, eight out of the twelve benefits previously stated as important had been achieved or somewhat achieved. These benefits are as follows:

- Better customer service via faster turnaround time by eliminating mail time to and from the agency.
- Enhanced public access and service delivery. Service and information is available 24/7, instead of 8-5 M-F, from any location.
- Customer has reduced travel time and expenses associated with receiving the service.
- Customer has the convenience of paying online.
- Provides easy access to query and update information from any location.
- Allows for automated and electronic collection and distribution of data to external customers and stakeholders.
- Provides the ability to offer services in an expanded number of locations without disbursing staff.
- Provides an infrastructure upon which subsequent programs and services can be added.

TDI did list a few benefits as important, but as not having been achieved through online implementation:

- **Reduction in internal processing time.**
- **Better customer service via faster turnaround time at the agency.**
The processing time for Agent License Renewal is the same for both the online and offline transactions, since the Comptroller of Public Accounts (Treasury Lock Box) receives payments, scans in the renewal data, and enters the amount received before the data is sent to TDI.
- **Improved accuracy of information given to customer.** TDI indicated that there was not very much room for improvement regarding renewals, because all customers get the renewal notice in the same format. If someone loses a renewal notice, he or she can request a duplicate notice from TDI. There probably has been an improvement in accuracy for persons other than renewal customers; they can now view an agent's information instead of requesting it verbally from TDI.
- **Improved accuracy of information entered.** Edits built-in to reduce exception processing and improve accuracy of information (by reducing data entry mistakes). Online renewals do not have data entry mistakes in recording the amount paid, but TDI has not monitored the amount of data entry mistakes made by the Comptroller's Office to determine the improvement in accuracy.

Because of the benefits of providing the service online for both the agency and the agents, TDI is planning to include stuffers with its renewal notices by the end of the year to increase agents' awareness about renewing their licenses on TexasOnline.

RECOMMENDATIONS

1. TDI should consider developing an interface between the KPMG address change system and the address database in order to automate processes and to shift staff resources to other needed areas.
2. TDI should move forward with its advertising campaign of the online licensing renewal opportunity using mail inserts in renewal notices.
3. When a critical mass of agents renews their licenses online, TDI should consider sending out renewal notices via email in order to reduce supply and mailing costs.

Driver License Renewal

Department of Public Safety

Date of Analysis: August 22, 2002

Contact: Jim Templeton, 512-424-5655, jim.templeton@dps.state.tx.us

DESCRIPTION OF SERVICE

The Department of Public Safety's (DPS's) main objective is to maintain public safety in the State of Texas. DPS works toward this goal within existing regulations and in cooperation with other agencies with mutual or related responsibilities. Among DPS's responsibilities is issuing driver licenses to eligible drivers in the State of Texas. This analysis compares the benchmarks of the Driver License Renewal service one-year prior and one-year post online implementation. Please note that the online implementation includes the Web application and the Interactive Voice Response (IVR) telephone application. DPS has made IVR available to allow those without access to the Internet to still be able to renew their driver licenses without having to mail it in or visit a DPS office.

SUMMARY OF PROCESS

DPS prints 40,000 invitations to renew each weekend. These invitations are printed eight weeks prior to a license expiration date. Within two days of the printing, the invitations are mailed to the licensees using a mail vendor. A mail distribution report is prepared for billing purposes. Once the licensee receives the invitation, he or she has three options: mail the renewal application into the main DPS office, walk-in to one of the 270 regional offices in Texas, or renew online.

EXCEPTIONS

DPS reported a number of exceptions that occur in processing driver license renewals. The following are a list of those exceptions:

- Applicants are rejected in the DPS office for lack of documentation or funds;
- Applicants are not eligible to renew due to suspension or withdrawal;
- Limits on the number of characters available for the license document force some citizens with apartment addresses to abbreviate their address;
- Update records fail batch edit;
- Quality Control must issue remakes due to poor quality license;
- License is returned by the post office;
- Insufficient payment by check;
- Rapid deposit discrepancies; and
- Scan line error on mail renewal documents.

Note: *Exceptions* are those transactions where processing of the renewal must be delayed or stopped. Exception time does not include the time that applicants may spend to gather required documentation or funds.

After implementing the Web and IVR online service channels, DPS still experiences the above exceptions among the offline transactions, since driver licenses are still renewed via mail and walk-in. However, the following exceptions exist among both online and offline transactions:

- The applicant may have become ineligible after successfully completing the online renewal (either by the Web or by telephone), but prior to updating the driver license file due to suspension or withdrawal. This is an extremely rare occurrence.
- Limits on the number of characters available for the license document force some citizens with apartment addresses to abbreviate their address.
- Update records fail batch edit. This is an extremely rare occurrence.
- Quality Control must issue remakes for poor quality licenses.
- License is returned by the post office.

In addition to these exceptions, the online channel has given birth to the following new exceptions:

- Reconciliation of USAS account discrepancies in payment amounts between application, RAW, and complete records. Reconciliation of account errors almost never occurs. The only exception is where a software change is made or CPA processing or ePay processing introduces errors;
- Refund of duplicate credit card charges; and
- Refund duplicate charges where customers also renew in a DPS office or by mail.

Before offering the service online through the Web and IVR, fewer than 2% of the total number of transactions per year were exceptions. When the online channels were implemented, the offline exception rate remained at 2%. However, the online exception rate was found to be 1% lower than offline exceptions. This can be attributed to the design of the online renewal channel. The online application requires a valid credit card number to initiate the process for renewing a driver license. The design of the online application has made it impossible for incomplete transactions to be accepted, much less processed.

Despite the fact that the number of online exceptions is lower than offline exceptions, the average time spent on online exceptions is twice as much as the time spent on offline exceptions—two minutes vs. one minute. DPS surmises that accounting exceptions associated with the online channels are responsible for raising the average online exception time. DPS implemented a new accounting system in May 2002 in order to support the online system. Exceptions or errors associated with the new accounting system are rare. As a result, DPS staff is experiencing a steep learning curve in dealing with accounting errors.

PERSONNEL

The number of personnel dedicated to the Driver License Renewal service increased slightly by 0.65 full-time employees (FTEs) between the pre-implementation and post implementation benchmark. While the number of FTEs increased slightly, the number of temporary workers remained constant at three employees. However, the number of hours that temporary employees worked on the service decreased by 8.3%. These personnel changes resulted in a slight increase in personnel costs dedicated to the Driver License Renewal process of 0.4%.

Note: These personnel numbers include the employees at the main office and at field offices.

The slight increase in personnel costs can be attributed to the methodology used. DPS estimated the time it takes to complete the tasks associated with completing a renewal and multiplied it by the number of licenses renewed. Because the volume of renewals increased, the time spent by staff also increased. Using this methodology, DPS will not experience a decrease in the number of FTEs dedicated to the Driver License Renewal service unless one of two scenarios occurs: (1) there is a decrease in the total volume of license renewals or (2) the adoption rate of the online channel increases.

TRANSACTIONS

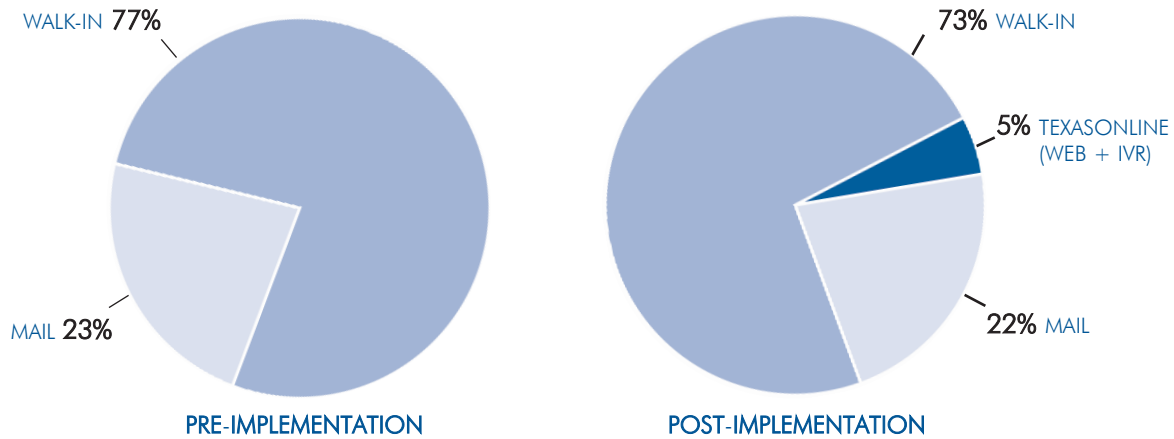
Before online implementation, the number of renewals processed per fiscal year was 3.5 million. After online implementation the number of renewals increased by 4% to 3.6 million. DPS experiences a peak period during the summer months, June through August. During peak periods the number of renewals processed increases by 10%.

DPS is one of the prime examples of how both the citizen and the agency benefit from offering an online delivery channel. Opening up the Web and IVR online delivery channels has allowed DPS to decrease both the average processing time and turnaround time. This means that citizens who accessed the Web or IVR versions of the service receives their renewed licenses faster than those who renewed their license through the mail. In addition, the funds are being deposited into the Treasury in a timelier manner, since citizens and businesses can make their payments to the agency online. For those transactions that are mailed by the citizen, the agency does not receive the funds until one to three days after it is mailed, depending on the U.S. Postal Service. The funds received by the agency require manual processing, which can take another few days to actually get the funds into the Treasury.

The average processing time for online renewals, both Web and IVR transactions, is more than 90% faster than offline transactions. The average turnaround time for the online channel is 25% faster than the mail renewal channel. The online license renewals and office renewals are mailed out within six days of the renewal date, while license office renewals can take up to eight days to be mailed.

Citizens can renew their driver licenses through three channels: (1) mail the renewal directly to DPS, (2) walk in to a DPS field office, or (3) renew online via the Web or IVR. The following is a graph illustrating the percentage of total transactions associated with each channel.

Shift in the Number of Information Requests Received Through Each Service Delivery Channel



ADOPTION RATE

Two methods were used for determining the adoption rate:

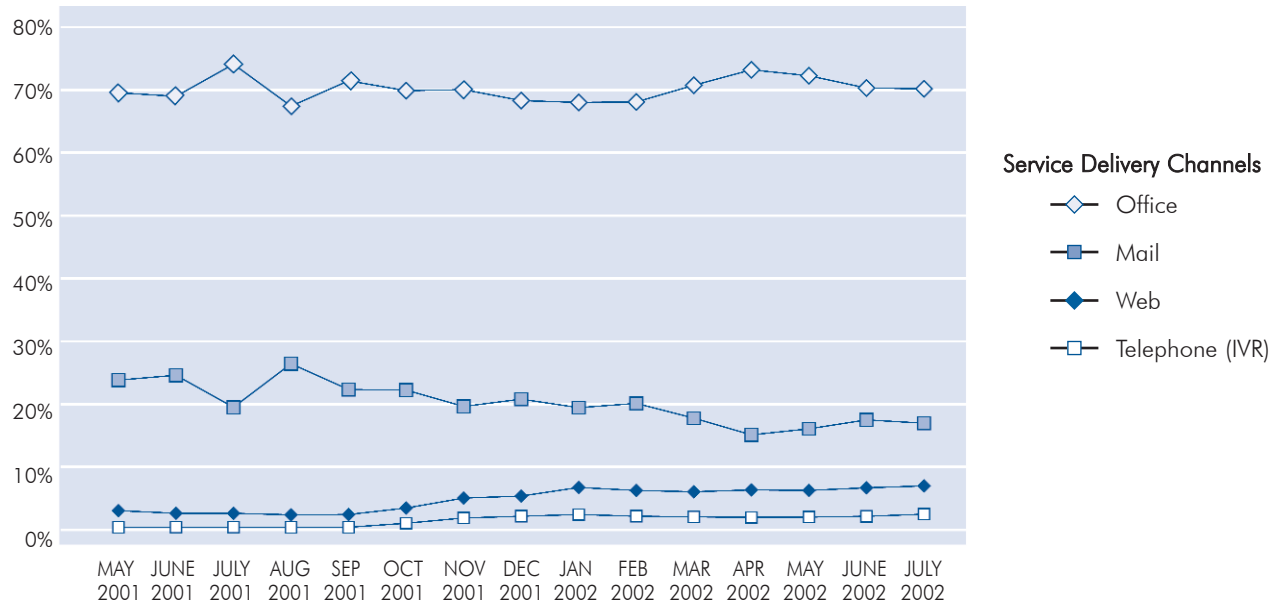
1. Number of online renewals out of the total number of renewals conducted and
2. Number of online renewals out of the total number of citizens eligible to renew online.

Note: Not every driver license holder is eligible to renew online. Citizens are required to visit a DPS office every other time they renew their driver license.

- **Method 1** — The graph above uses the first method of determining adoption rate: calculating the percentage of online renewals out of the total number of renewals conducted. The graph illustrates how the opening of the Web and IVR online channels have transferred about 4% of the transaction volume from the walk-in channel to online and 1% of transaction volume from mail to online. Using the first method, the annualized adoption rate for the first full year (May 2001 through April 2002) that the online channel was available is 5%. The adoption rate for online renewals conducted in the month of July 2002 only was 9%.
- **Method 2** — When using the second method to calculate the adoption rate—calculating the percentage of online renewals out of the total number of citizens eligible to renew online, the annualized adoption rate for the first full year (May 2001 through April 2002) is 10%. For the month of July 2002 the adoption rate was 14%. The following graph, based on the second method of determining adoption rates, shows how the adoption rates for the different service delivery channels have fluctuated since May 2001 when the online Driver License Renewal service was introduced. DPS’s goal is to have 41% of all renewals conducted through alternate means—Web, IVR, and mail. Currently these three channels comprise 27% of all renewals.

The cost per transaction pre-implementation was \$2.98. The cost per transaction rose by 14% to \$3.40 in the post-implementation benchmark study. The 38% rise in service-related expenses

Adoption Rate Percentages of DPS' Service Delivery Channels



was the primary contributor to the increase in the cost per transaction. The 38% includes \$1.6 million in online expenses (development fees, hardware costs, and credit card processing fees) and a 5% inflationary increase in offline expenses (includes printing, supplies, mailing costs, and outsourcer expenses). The next post-benchmark study will not have development fees and hardware costs included since these are one time costs paid by DPS. If development fees, hardware costs, and the 5% inflationary increase in offline expenses were not included in this post-implementation benchmark study the cost per transaction would be \$2.88, ten cents less than the pre-implementation benchmark. The TexasOnline Authority expects to see further cost savings when the next post-implementation benchmark study is conducted.

BENEFITS

The benchmarking template asked DPS to evaluate what qualitative benefits were important to it before going online. DPS ranked all the benefits listed in the template as somewhat important to very important for DPS's Driver License Renewal service. Improved customer service and business re-engineering ranked high in importance. Enhanced public access and service delivery available 24x7 from any location was ranked very important among the customer services benefits. In the category of business re-engineering, DPS stated that the providing an infrastructure such as TexasOnline was very important as other programs and services can be added. When DPS developed the online Driver License Renewal service, they developed an infrastructure that can be used by all subsequent DPS online applications. At the writing of this analysis, the online address change capability is being developed by DPS. Because the online infrastructure is already in place for DPS, the address change application does not have to duplicate such infrastructure.

One of the key benefits of placing the Driver License Renewal service online is that DPS outsources the data entry of changes of address. The online application allows citizens renewing

their driver license to update their addresses. Because the citizen is entering his or her own address changes, the transaction can be processed electronically online. Address changes submitted through the mail require manual processing.

Note: Please note that at the writing of this analysis, only those citizens who are eligible to renew their driver license via the Internet are able to change their address online. All other address changes still have to be done via mail. DPS is currently working with TexasOnline to allow all address changes to be conducted online.

Although this benchmarking study did not explore the actual citizen time savings and convenience of the online channels, the TexasOnline Authority and DPS speculate that providing this service through the Web and IVR has saved the citizen an immense amount of time and effort. The citizen no longer has to take time off work to drive to the nearest DPS office, find parking, and wait in line for hours in order to renew a driver license. This means that citizens do not have to use their personal time in order to take care of government business, which in turn means that companies do not have to experience a loss in productivity for the time.

Another customer service related benefit of the Web and IVR channels is that citizens are able to pay for their renewed driver licenses with a credit card. Credit cards are widely accepted in the private sector; however, acceptance among state government agencies is not as prevalent. DPS's traditional channels, both mail and walk-in, do not accept credit cards. The online channels give citizens an additional means of paying for their renewed driver license.

The post-TexasOnline implementation template asked DPS if it had achieved all the benefits it listed as important. DPS indicated that all but one benefit—reallocate staff to more qualitative work—was achieved or somewhat achieved. DPS responded that the adoption rates have not yet risen to the level needed to allow for reallocation of staff.

RECOMMENDATIONS

1. Since the majority of license renewals are conducted by walk-in, DPS should continue the use of posters and handouts at DPS offices as an effective, low-cost marketing strategy for the online service channel. The TexasOnline Authority also encourages the continued use of mail inserts in renewal notices as a low-cost, effective marketing strategy for driving the public to use the online renewal service.
2. DPS should consider offering self-service PC terminals in its offices to allow walk-in renewals an opportunity to renew online.
3. DPS should consider adding script to the last online renewal page, after the citizen has completed the transaction, stating that the driver license renewal has been completed. The script should also ask citizens to not renew by mail if they have completed the online renewal process.
4. DPS should consider improving the instructions on the online application to help the licensee in inputting the accurate address.

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