A Quality Measures Plan Within the IRS: A Case Study

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The Internal Revenue Service (IRS) maintains telephone sites across the nation to answer tax law questions, forms and publication requests, procedural and refund inquiries. They also serve as contact sites in response to collection notices. The IRS is in the process of modernizing its equipment and with that, it is changing the way it interacts with taxpayers. As part of this approach the Telephone Routing Interactive System (TRIS) Project Office conducted a pilot of a Taxpayer Service Automated Collection System telephone routing application in the Cleveland District from March 22, 1993, through May 28, 1993. Both Taxpayer Services and Collection participated in this pilot. The pilot tested the results of routing incoming Taxpayer Service and Collection calls through a script addressing both Taxpayer Service and Automated Collection Service work to the appropriate assistor. A touch-tone phone was required to use the routing application.

The TRIS Project is charged with developing and building two types of telephone applications for the IRS:

1. An automated telephone call routing (voice menu) system that permits customers seeking help from the IRS to direct themselves to the appropriate source of assistance.

2. Automated systems that interact with customers to resolve selected telephone inquiries without an assistor.

The pilot was evaluated by an Evaluation Team consisting of National Office, Central Region, and Cleveland District Taxpayer Services and Collection representatives. The team used the Quality Measures Plan developed for the Cleveland pilot to measure the attainment of eight goals. This paper summarizes the Quality Measures Plan and the results. These results will be incorporated into the next TRIS Pilot at the San Francisco District Office call site.

■ Background

Taxpayer Service Call Flow

Taxpayer Service Division provides telephone assistance at 32 toll-free sites nationwide and in Puerto Rico. These sites answered nearly 35 million calls from customers in 1992. Approximately 4,600 individuals provide telephone assistance at peak times during the filing season.

Inquiries from taxpayers are answered by frontline assistors. These assistors identify the tax law topic question and then determine whether or not they have the expertise to deal with the issue.

If the frontline assistor is able to provide the answer, the taxpayer receives the required assistance and exits the system. If not, the call is transferred to a second assistor, either one with more tax law/procedural expertise or, in the case of a refund or account question, one with access to a data retrieval terminal. Assistor #2 again identifies the question and provides the answer.

If for any reason Assistor #2 is not able to provide an answer, they complete a written referral document. These are followed up in writing or by telephone within prescribed time frames, usually 10 calendar days.

The IRS has special distribution centers (Centralized Inventory Distribution System) to fill forms and publications orders from customers; however, Taxpayer Service Division processes a large number of these calls each year.

With automated routing, incoming calls to Taxpayer Service were answered by a welcome menu, a main menu and series of submenus. The welcome menu greeted customers, acknowledged that they had reached the IRS, and identified touch-tone callers. The main menu asked call-

ers to choose from seven options and to press a corresponding touch-tone key. With the automated call routing, callers routed themselves to the more experienced Taxpayer Service assistor. Callers who were either unable to route themselves because they did not have touch-tone telephones or who preferred to talk to a person were considered to be "default" calls. The system routed these calls to frontline assistors who, in turn, route them as described above.

Automated Collection System Call Flow

Approximately 2,500 individuals provide Automated Collection System (ACS) telephone assistance at 23 call sites nationwide. These sites answered 5.4 million calls from taxpayers in 1992.

The telephone workload within the ACS is divided into teams based on the last two digits of the caller's taxpayer identification number. Incoming calls are screened, where IRS employees request the callers' taxpayer identification numbers and route the calls to the appropriate team based on the last two digits.

With the automated call routing, callers routed themselves to the appropriate ACS team. All calls were routed through the call distributor and voice response unit. If taxpayers choose to use the self-routing feature, they directed themselves to an ACS team based on the input of their taxpayer identification numbers. If they defaulted, the system routed these calls to Taxpayer Service Division fronters, who, in turn, routed them to the appropriate ACS destination.

■ Anticipated Measures and Benefits

The TRIS Business Case Analysis projects cost savings from the automated routing of telephone calls. The pilot validated the assumptions on which these cost savings were based. It also assessed the impact and effectiveness of the automated routing script in Cleveland District. Specifically, the pilot measured the benefits of automated routing in two areas: labor savings and taxpayer burden reduction.

Labor Savings Benefits

❑ **Goal 1**: The call routing application will yield a ten percent increase in Taxpayer Service productivity,

as measured by the Taxpayer Service telephone referral rate.

With automated routing, the screening process for touch-tone callers is automated, and callers direct themselves to the appropriate source of assistance. Automated routing eliminates the need for two assistors to handle each call or for the caller to dial a second telephone number to receive help. Hours formerly spent manually routing calls can be spent more productively. Automated routing also reduces the number of hours used responding to written referrals. These hours can be spent answering calls on-line.

The telephone referral rate is computed by dividing all telephone calls answered by the sum of all telephone and referral hours, including account, technical, and problem resolution program hours. The telephone referral rate measures the time it takes to resolve a call, either by a front-line assistor or a combination of a front-line and a referral assistor (in the case of transferred calls).

❑ **Goal 2**: The call routing application will yield a ten percent increase in the Taxpayer Service overall productivity rate, as measured for budget purposes.

The overall productivity rate is the measure that was used to determine the staff year savings which were assessed against the Taxpayer Service budgets in 1993 and 1994. This rate is computed by dividing Taxpayer Service direct units (telephone calls answered, correspondence answered and walk-in contacts) by all program hours, including overhead.

❑ **Goal 3**: The call routing application will yield a sixty percent decrease in frontline routing hours for ACS during the pilot.

Automated routing will allow touch-tone callers to route themselves, reducing the number of hours required to manually route calls.

The number of hours saved is determined by the number of callers with touch-tone phones who are willing to use automated call routing. The 60 percent decrease in routing hours assumes that 70 percent of ACS callers use touch-tone phones and 10 percent

of ACS callers default. It is estimated that five percent of callers will refuse to use the self-routing system. Based on these assumptions, plus some economics of scale that will result with Taxpayer Service front-line handling the default calls, a 60 percent labor saving was estimated.

Taxpayer Burden Reduction

❏ **Goal 4:** The call routing application will have no impact on the Cleveland District Taxpayer Service telephone-accuracy-rate.

The TRIS pilot script in conjunction with the automated routing system will enable callers to direct themselves to the assistors who can resolve their inquiries. The accuracy of the answers provided to the taxpayers should not be affected by the automated routing system. Cleveland experienced little staff change and no hiring in the past year, so there is little likelihood of assistor experience affecting the accuracy rates.

❏ **Goal 5:** Measure the frequency with which callers route themselves to the correct source of assistance.

Taxpayers direct themselves to the appropriate source of assistance. Automated routing reduces taxpayer burden by eliminating the need for taxpayers to repeat their requests and attendant background information to more than one assistor before receiving the resolution to their inquiries.

The number of times a call is transferred within the system may be a result of weaknesses within the script. Data obtained from this measure will be used as a basis for future script improvement.

Taxpayer Service telephone assistors recorded any mis-routed and multi-topic calls they received for several weeks of the pilot. Through questioning the taxpayer, it was evident from the display on the telephone set whether the topic selected from the menu matched the nature of the inquiry.

There were six main menu selections for Taxpayer Service: Main, Collection, Form Order, Refund, Individual Tax Law, and Business Tax Law. Each main menu selection contained its own separate menu providing several options. The Automated Call Distributor required development of many applications to accommodate the menu call routing. The application title is displayed on the phone set. The assistors used this to identify mis-routings.

❏ **Goal 6:** The call routing application will move Taxpayer Service and ACS toward a one-stop service environment that permits callers to direct themselves to the appropriate source of assistance with one telephone call.

There are several indicators of improved one-stop service:

• <u>Self-directed callers</u> - For a given application such as pensions, the ratio of the number of callers that are self-directed to the pension application to the total number of pension calls (self-directed + transferred) indicates script effectiveness.

• <u>Written referrals</u> - The number of written referrals during the pilot compared to the number for a comparable period before automated routing indicates the level of one-stop call resolution.

• <u>On-line closures</u> - The number of on-line closures during the pilot period compared to the number for a comparable period before automated routing indicates the effectiveness of self-routing in increasing on-line closures with one-stop service.

• <u>Teletax routing</u> - The ratio of the number of calls routed to Teletax to total net calls answered measures the number of callers that would have been either answered by an assistor or told to dial the Teletax phone number.

❏ **Goal 7:** The call routing application will decrease the time to get a caller to the appropriate ACS or Taxpayer Service destination.

Automated routing will be more efficient than manual call transfers. The length of time that a caller spends in the automated routing application is a measure of system efficiency.

❑ **Goal 8:** Obtain a taxpayer customer satisfaction rate of 80 percent.

Three customer measures were performed during the pilot, two for IRS personnel (internal customers) and one for taxpayer callers (external customers).

a. **Internal - IRS Employees**

The Bureau of Labor Statistics (BLS) Behavioral Science Research Center developed an IRS Assistor Survey to assess the impact of the introduction of automated routing on IRS assistors.

In addition, the BLS developed a feedback form for use by both assistors and managers during the pilot. This form was used to record comments about the automated routing application. To ensure anonymity, individuals were asked to mail comments directly to the TRIS Project Office without identifying information.

b. **External - Taxpayers**

Separate satisfaction surveys were developed for Taxpayer Service and ACS customers so that the features of both scripts could be evaluated. Survey questions addressed ease of use, clarity of the menu, resolution of the taxpayer's issue, general satisfaction with the system, and suggestions for improvements. Taxpayers rated their degree of satisfaction with the IRS telephone system on a scale of one to five.

The taxpayer customer satisfaction survey as developed with BLS was conducted for three weeks during the pilot measurement period by a team of IRS employees from Cleveland District, Central Region, and National Office. The team of interviewers was trained by the BLS on interviewing techniques to reduce nonsampling error.

The design and skip pattern of the surveys was reviewed and determined that each functional area should complete 700 surveys. This assumed a 90 percent confidence with a precision of 0.05.

■ **Results**

❑ **Goal 1:** A ten percent increase in Taxpayer Service productivity, as measured by the Taxpayer Service telephone referral rate.

The automated routing application yielded a 24 percent increase in the Taxpayer Service telephone referral rate for the corresponding time period between the two years. Contributing to this increase is the large percentage of taxpayers who directed themselves to an assistor who could answer their question or to Teletax for automated refund information. However, even though Cleveland answered fewer calls during the pilot compared to the year before, telephone circuitry costs for the toll-free service increased 56 percent.

❑ **Goal 2:** A ten percent increase in the Taxpayer Service overall productivity rate, as measured for budget purposes.

The automated routing application yielded a 17.6 percent increase in the overall productivity rate for the corresponding time period between the two years. As previously mentioned contributing to this increase is the large percentage of taxpayers who directed themselves to an assistor who could answer their question or to Teletax for automated refund information.

❑ **Goal 3:** A 60 percent decrease in frontline routing hours for ACS during the pilot.

The number of hours to route collection calls during the pilot period declined by 87 percent.

During the pilot period, 56 percent of the ACS calls were self-directed to a specific ACS team, 40 percent defaulted to Taxpayer Service assistors, and 4 percent were routed to an open gate.

A time and motion study showed that it took the Taxpayer Service default assistors about one minute (59.1 seconds) to manually route the call to ACS.

❑ **Goal 4:** No impact on the Cleveland District Tax-payer Service telephone accuracy rate.

Twelve weeks of accuracy rates were compared. Eight of the twelve weeks had 1993 accuracy rates greater than the corresponding 1992 rate. Using the Wilcoxon Sign Rank Test there is evidence to support the statement that the accuracy rate during the Cleveland pilot is at least as high as the rate in 1992.

Comparisons of the Cleveland accuracy rates with the regional and national rates for the corresponding weeks showed no statistical evidence of difference as a result of the pilot.

❑ **Goal 5:** Measure the frequency with which touch-tone callers route themselves to the correct source of assistance.

Seventy-one percent of the taxpayers used the menu options, of which 96.2 percent routed themselves correctly. Hence, about 68 percent of Cleveland's callers correctly routed themselves. Taxpayers calling for ACS routed themselves about 56 percent of the time.

Our sample of assistor data indicated that 0.4 percent of the callers had multi-topic questions. Based on these results, we eliminated multi-topic calls as a current area of concern.

The sample also provided an estimate of a 5.3 percent of mis-routings with a precision of 0.03 percent at 90 percent confidence. The mis-routed calls were grouped by origin: 1.5 percent were mis-routed internally by IRS assistors and 3.8 percent by taxpayers who mis-directed themselves.

The mis-routings were reviewed for patterns and relationships between the menu selection display and the nature of the taxpayer's question. Mis-routing were identified in twenty-four menu selections or applications. Six of the twenty four selections accounted for over 50 percent of the total mis-routings. Of the six menu selections, we found the mis-routings were clustered in two of the selections: Individual Tax Law and Refund Menus.

❑ **Goal 6:** Move Taxpayer Service and ACS toward a one-stop service environment.

Written technical and account referrals decreased by 54 and 51 percent, respectively. There was also a 25 percentage point increase in on-line closures, equating to a 37 percent increase in closures over the corresponding previous years time frame.

About three percent of the calls received during the pilot test were taxpayers selecting the refund sub-option. They were automatically transferred to Tele-tax.

❑ **Goal 7:** Decrease the time to get a caller to the appropriate ACS or Taxpayer Service destination.

The average time to deliver an ACS call to the appropriate destination increased 27 percent. During the pilot, with automated routing, it took an average of 1 minute and 53 seconds.

Burden was reduced for those taxpayers who routed themselves through the system by using a touch-tone telephone to input their taxpayer identification numbers. For these taxpayers the average time was one minute three seconds, a 29 percent decrease. Fifty-six percent of the calls processed were in this category.

However, burden was increased for callers who defaulted to Taxpayer Service. For these 38 percent there was an average time of three minutes 15 seconds per call, or a 119 percent increase. In addition to the time the taxpayer spends negotiating the script, which was an average time of 1 minute and 2 seconds, there is the queue time for the front line assistance of 73 seconds (one minute 13 seconds), plus the average talk time of one minute to accomplish the transfer. The substantial increase for this type of call resulted in an overall increase even though this volume of calls was less.

The average time to resolve the customer inquiry did reflect a decrease from 11 minutes 21 seconds during the base period, to 10 minutes 27 seconds. While this is positive, considering the limited and routine

routing function of the script, reduction in time can not be attributed to the script itself, because the average time to actually get the taxpayers' calls to point of resolution increased.

❑ **Goal 8:** Obtain a taxpayer customer satisfaction rate of 80 percent.

a. Internal - IRS Employees

The internal survey was distributed at three separate times to the assistors. In summary, the results showed that during the pilot assistors felt that the calls they received were generally inside their topic area (82%). The majority of assistors (68%) also believed that the number of taxpayers that were incorrectly routed either stayed the same or decreased. Assistors perceived that their workload was about the same or less than other assistors (67%). However, the assistors felt that the number of calls that were waiting on hold increased (66%).

b. External - Taxpayers

Customer satisfaction exceeded the 80 percent goal in all cases. The average satisfaction rate was 86 percent.

Callers were asked "on a scale of 1 to 5, with 1 being very dissatisfied, and 5 being very satisfied," how they would rate the IRS telephone system. The percentage of callers who were satisfied with the system was roughly 86 percent ± 1. We defined "satisfied" as those callers who rated the TRIS system a 4 or 5.

■ Acknowledgments