

CONVERTING CES REPORTERS FROM TDE TO WEB DATA COLLECTION

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Purpose: This paper reviews a methodological test to convert establishment reporters in the Current Employment Statistics (CES) program from telephone reporting, more commonly known as touchtone data entry (TDE), to Web reporting. The paper analyzes three different protocols for Web conversion: telephone, FAX, and mail. The paper also compares sample response rates prior to and after conversion.

Background: Achieving high response rates in a timely and cost-effective manner are the top priorities in the CES program conducted by the Bureau of Labor Statistics. The CES is a monthly survey of employment, payroll and hours based on a sample of 280,000 non-farm business establishments. The CES data are published on the first Friday of each month, after only 10-15 days of collection. The data—employment by industry, state and metropolitan area, average hourly earnings and average weekly hours worked—provide one of the earliest indicators of the health of the economy. Being a voluntary survey, the CES program utilizes several data collection methods including mail, computer-assisted telephone interviewing (CATI), TDE, FAX, electronic file transfer, and Web.

New respondents are first initiated into the CES program using CATI. But because CATI is labor-intensive and expensive, after six months most newly solicited respondents are converted to a self-reporting method such as TDE. As a result, today about 27% or 76,000 of all CES respondents report by TDE.

With changes in technology and with the Internet becoming more pervasive, the CES program began offering Web as a reporting method in 1996. The reasons for offering Web as a collection method were three fold: 1) Web is less expensive than TDE, costing on average about \$0.79 per unit compared to \$1.41 for TDE; 2) Web allows for self data editing online; and 3) respondents were requesting Web reporting. Table 1 shows the monthly data collection activities costs for TDE and Web. The biggest cost savings from Web collection is that the system provides on-line editing whereas under TDE each data edit failure requires an edit reconciliation phone call to the respondent.

The CES program first began converting a small number of respondents from TDE to Web on a trial basis. Later on the program began to offer CATI

respondents a choice of TDE or Web. In April 2004 the Web sample was approximately 1,500 respondents, mostly of them being converted directly from CATI.

Table 1: Monthly, per unit Costs

Data Collection Activities	TDE	Web
Advance Notice	\$0.12	\$0.06
Non-Response Prompting	\$0.25	\$0.01
Data Collection	\$0.17	\$0.31
Edit Reconciliation	\$0.74	\$0.25
Help Desk	\$0.13	\$0.16
Total	\$1.41	\$0.79

For respondents who agree to report by Web, the CES program provides them a temporary account number and password by mail. The respondents are then asked to activate their account by choosing one of two security levels available: 1) they can choose a permanent account number and password, or 2) automatically install a BLS-provided Digital Certificate (DC) which allows them access without having to maintain an account number and password. The Digital Certificate provides a higher level of security over account number and password but it adds an additional \$0.10 to the monthly unit cost of collection.

Methodology: In the current TDE to Web test we sought to answer several questions. What protocol would be most efficient for converting 76,000 TDE respondents to Web? Would TDE respondent be willing to switch to Web reporting? Would Web as a reporting method improve response rates? Would Web be cost efficient? What level of security would respondents prefer?

To answer these questions we randomly selected a test sample of 3,000 TDE respondents in April 2004 and divided them equally among three contact-method groups. The first group was contacted by telephone, the second by FAX, and the third by mail. These respondents were asked the following questions:

1. Do you have access to the internet at your desk?
2. Are you using Internet Explorer 6.0 or higher?
3. Do you have access to E-mail at your desk?
4. If YES to all the above, would you like to report your data via the Internet?

In addition, for those who agreed to Web reporting we asked that they provide us their e-mail address. The FAX and mail group respondents were asked to return the short questionnaire by the same method they

received it. Regardless of the contact method, respondents who met our Web eligibility criteria and agreed to report via Web were mailed a packet with their temporary account number and password along with instructions on how to activate their account and report their data.

The FAX contact method proved to be the least labor-intensive of the three methods and, as will be shown in the next section, also proved to result in the highest initial response rate on Web. Since the FAX letter was generated automatically and sent by a computer, this is clearly a less labor intensive and costly process than manually printing, stuffing and mailing letters or making personal telephone calls.

Results: After three months respondents who intended to return the questionnaire had done so and by this time we also had exhausted all attempts to reach the telephone group units. Table 2 shows the TDE to Web conversion results as of the end of the July collection cycle. The table shows that 74% of the test respondents were successfully contacted, with the telephone group showing the highest contact rate of 85%. For the FAX and mail groups, a contact means the respondent returned the questionnaire.

The overall Web eligibility rate is 71% with the telephone group showing the lowest rate of 56%. However, we believe that this rate is closest to the actual eligibility rate because ineligible FAX and mail respondents are less likely to return the questionnaire. This rate is consistent with results from the Computer Use Survey conducted for the Current Population Survey, also a Bureau of Labor Statistics program, in September 2001¹. Of those eligible for Web, 89% were converted to Web, with no significant difference among the three groups.

Table 2: Results from Initial Contacts

	Contact Modes						Total	
	Call		Fax		Mail			
Sample	1002	%	1001	%	1008	%	3011	%
Contact Rate	848	85%	652	65%	721	72%	2221	74%
Eligibility Rate	476	56%	543	83%	564	78%	1583	71%
Conversion Rate	413	87%	493	91%	506	90%	1412	89%
Activation Rate	309	75%	408	83%	367	73%	1084	77%

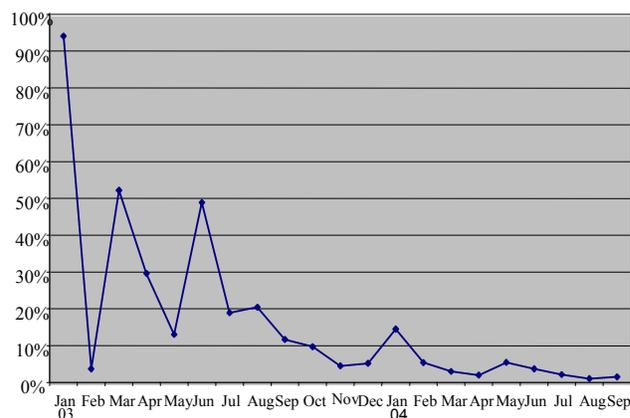
The activation rate (respondents who activated their web accounts) was only 61% in May but reached 77% by July. Between the three groups, the FAX group had a higher activation in the first two months but the difference disappeared after the fourth month.

Not shown in the table, of those who activated their accounts, 90% preferred account number/password to digital certificate with no difference among the three

groups. The response rate for respondents who selected Digital Certificate was 12 percentage points lower than those who selected account/password. Anecdotal evidence indicates that these respondents tend to have initial difficulty due to improper installation of the Digital Certificate. In some instances the problems are due to respondents' internal systems configuration involving things such as firewalls, installation restrictions, etc.

The percent of total inquiries for assistance as a percent of total Web sample is depicted in Figure 1. The figure reveals the percentage of Web respondents requesting assistance each month. It is important to note that since Web data reporting completed its introductory phase in July 2003, the percentage of Web respondents requesting assistance has remained constant at approximately 5%. This statistic is especially noteworthy because the 5% average has remained consistent despite the rapid increase in the Web sample as a result of the TDE to Web conversion test. In comparison, the average rate of inquiries for TDE respondents is 3%. We believe that even with a mature Web data collection system respondents' inquiries will continue to be a little higher than TDE by the fact that Web respondents are likely to forget their account numbers or passwords. The figure does show a small increase in inquiries after the TDE to Web conversion test in May 2004 but the spike leveled off after the first couple of months.

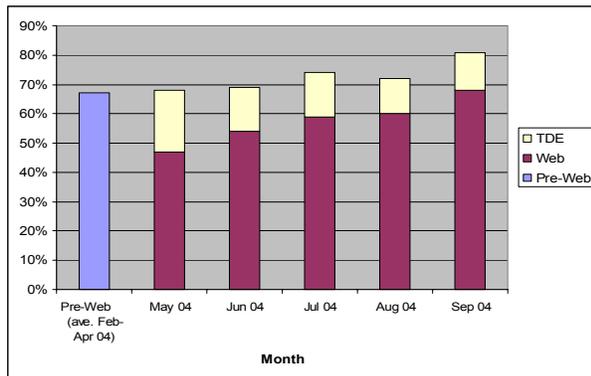
Figure 1: Web Respondents Inquiries, by Month



In terms of response rates, the new Web respondents did not do as well as they did while on TDE. Figure 2 shows the Web respondents response rates prior and after conversion to Web. Their average TDE response rate for the prior 6 months was 67% compared to an average of 55% after the first five months on Web. However, the Web response rates continue to improve, increasing from 47% in May to 68% in September. The figure also shows that some of the respondents continue to report on TDE even though they have been

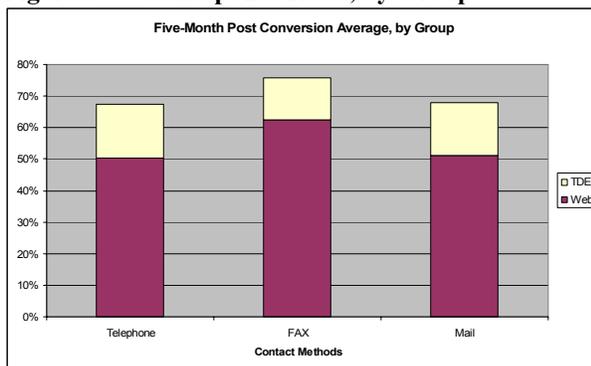
converted to Web. Over the 5-month post-conversion period, an average of 203 respondents or 16% reported on TDE, raising the overall post-conversion response rate to 73%. For September, the Web component of the overall post-conversion response alone is 68% compared to the average pre-conversion rate of 67%. This shows that during the first few months after transition the Web response rates will be lower but will slowly increase to level comparable to pre-conversion rates. When the units still using TDE are added in, the combined rate for Web and TDE exceeds the pre-conversion rate for the past three months.

Figure 2: Overall Web Response Rates



The three different contact methods did seem to impact response rates. Figure 3 below shows that the average Web response rates among the three contact groups during the five post-conversion months are comparable, with the FAX group performing about 5 percentage points better than the other two groups if you include those reporting by TDE. We do not have an explanation for the FAX group's better performance since the response for all three groups were essentially identical during the pre-conversion period. Over the last two months, the higher response rates for the FAX contact group have disappeared. For example, for September the response rates for the telephone, FAX, and mail groups were 66%, 69% and 67% respectively.

Figure 3: Web Response Rates, by Group



Why was the Web response rate lower than the pre-conversion TDE response rate? The principal reason was a large number of the respondents did not activate their account after they received their account information. We contacted a sample of 176 respondents who had not activated their Web accounts to find why they had not done so. The most prevalent reason given was that they had decided to remain on TDE after all. Table 3 lists the reasons why respondents failed to activate their Web accounts. The majority of these respondents (54%) preferred to return to TDE after having agreed to use Web reporting. We suspect that most of these respondents agreed to go to Web without given it much thought and changed their minds later.

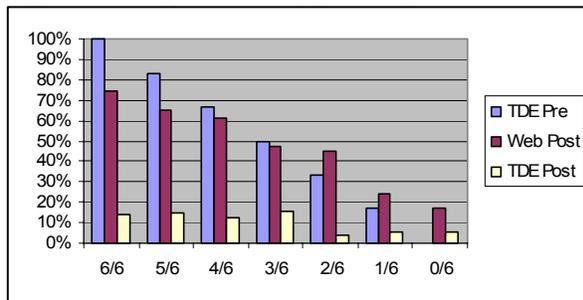
Table 3: Reasons for Not Activating Web Account

Reasons	Count	%
Forgot	7	4%
No time/too busy	19	11%
Tried but had a problem	13	7%
Did not receive packet	26	15%
Lost information	4	2%
Decided to return to TDE	95	54%
Refusal	3	2%
Out-of-business	2	1%
New contact person	1	1%
Not eligible (wrong browser)	2	1%
Other	4	2%
Total	176	100%

For respondents who activate their account, their average response rate is about 75%, which is comparable to previous TDE response rates. Thus, the drop off in response rates comes from the respondents who fail to activate their accounts.

Figure 4 shows the TDE pre-conversion rates for the previous six months prior to Web conversion separated by the number of times the respondents reported on time while on TDE. The post-conversion response rates are for July-September months. For example, those that reported on time for all six months are labeled 6/6 and have a pre-conversion response rate of 100%. Those that reported on time 5 out of six months are labeled 5/6 and have a pre-conversion response of 83%. The figure shows that for the 6/6, 5/6, 4/6 and 3/6 respondents the post-conversion Web response rates are lower than the pre-conversion TDE rates. However, if you add the post-conversion TDE to the web response rates, than the overall post conversion response rates are higher than the pre-conversion response rates for all respondents except for the 6/6 and 5/6 respondents. For the respondents who did poorly prior to conversion (2/6, 1/6, and 0/6), the post-conversion Web response rates are on average 12 percentage points higher.

Figure 4: Response Rates, pre and post conversion



The results show that there is potential for response rate reduction during the first few months after transition. The average response rate loss during the first three months after transition was 8 percentage points. As a result, the transition to Web requires extensive follow-up procedures to ensure respondents activate their accounts immediately rather than two or three months after transition.

Conclusions: Of the three contact methods used transition respondent from TDE to Web, FAX was the most cost-efficient. The FAX method required fewer resources in terms labor and materials.

While initial response rates fell below the rates experienced under TDE, after several months, and extensive follow-up, Web rates matched the pre-Web levels.

Respondents do not seem interested in higher level of security, given that only 10% selected Digital Certificate. This fact coupled with the fact that response rates for the Digital Certificate respondents were initially lower, suggest that there is little advantage to offering this security option.

We will continue to monitor the Web respondents' performance relative to their TDE counterparts, as well as the Web Helpdesk resources needed as the number of Web respondents increase.

Notes:

¹ Computer and Internet Use at Work in 2001, Current Population Survey, Bureau of labor Statistics' press release, October 23, 2002.