

May 24, 2000

Mr. Kenneth L. Miller, Commissioner
Indiana Department of Revenue
100 North Senate Avenue, IGCN 148
Indianapolis, Indiana 46204

Dear Commissioner Miller:

This letter is written as an overview of the barcoding project. As Administrator of the Returns Processing Center for the Indiana Department of Revenue, I am writing on behalf of the employees of the Processing Center and how we have benefited from the barcoding project.

The Indiana Department of Revenue embarked on the barcoding project in January 1999 to enhance our ability to process Individual Income Tax returns in a more efficient and effective manner. Our partnership with three service providers, H & R Block, Creative Solutions and Access Indiana, resulted in our receiving just over 132,000 tax returns during the 1999 processing season. The benefit to the Department of Revenue and the Returns Processing Center became evident as soon as we began to receive barcoded returns. We were able to process a batch of 90 returns in approximately 12 to 15 minutes. The processing included scanning the return, making any necessary changes to the name and address field on the return and depositing any checks associated with the return.

The scanning of returns takes the place of traditional data entry. Traditional processing and data entry of the same 90 tax returns would have taken between 4 and 4 1/2 hours to complete. The savings over our cost of approximately \$55,000 in the first year was just over \$40,000. In this our second year of the barcoding program, we have already received over 185,000 returns with the hope of receiving in excess of 200,000 by the end of the year. Already we have calculated our savings in the second year to be something over \$145,000. All of these savings are in man-hour equivalents either from our own staff or those of the outside vendors we use to data enter the returns. In additions to these savings, we also have indirect savings brought about by having processed the tax returns faster, thus causing the refunds to be issued sooner with fewer calls being received to inquire about their tax returns and/or refunds.

Taxpapers receive the greatest benefit by having their return entered into the system faster via the bar code being scanned. No errors are introduced when the return is scanned, which can happen when the return is data entered by a data entry operator. We have the capability of making corrections to the header information (name, address and social security number) as soon as the return is scanned. The refunds are generated faster than for returns that are data

entered. Taxpayers find that they don't have to call to check on their return/refund.

Because of the accuracy of the returns, fewer returns suspend and have to be corrected before the return will post to the system or the refund can be generated. The error rate for bar coded returns is about the same as for electronically filed returns which is just over 1% while the suspended rate for traditional paper returns is over 12%.

As you are aware, the first year of the barcoding project, Indiana was the only state in the United States with a barcode initiative. This, the second year of the project we have been joined by Delaware, Illinois, Missouri and Rhode Island. It is our anticipation that we will have an additional 8 or 10 states join in this initiative for the 2001 processing season. In addition, a number of states and local governmental jurisdictions have requested and received information regarding this initiative. We also know that a number of software vendors will incorporate the use of the barcode in their software packages for next year. Representatives from the Indiana Department of Revenue along with representatives from other states have been working with the FTA (Federation of Tax Administrators) and NACTP (National Association of Computerized Tax Preparers) to develop standards for all states and software developers. These standards will help to ensure that we are all working toward the same goals and will not cause undo problems because of different implementation standards.

From a processing standpoint this project has been very successful and has become an important part of the menu selection of ways a taxpayer can file their tax returns.

Overview of Benefits:

- Reduced Processing Time/Reduced Costs
- Reduced Number of Suspended Transactions
- Reduced Number of Telephone Calls
- Faster Deposits
- Faster issuance of Refunds
- Cost Benefit is in direct relationship to the number of returns received

The impact of the Department's barcode initiative cannot be overstated. This technology has the potential of revolutionizing the processing of tax returns all across the country. Please note that barcoding, however, is never meant to take the place of the numerous electronic filing programs already in place. Nevertheless, it doubt, others can learn from Indiana's success.

I hope this overview will prove helpful in explaining the bar-coding project and its benefits not only to the State of Indiana and the Department of Revenue but also to the taxpayers who utilize this technology.

Sincerely,

Linda Dollens, Administrator
Returns Processing Center
Indiana Department of Revenue
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Why has Indiana Implemented Two Dimensional Bar-Coding?

Indiana receives over 2.8 million individual tax forms each year, half of which are received in the two weeks surrounding April 15th. Use of electronic filing has replaced over 529,000 of these paper documents, and is growing every year, but not fast enough. Many of the Indiana taxpayers are still more comfortable filing a paper document through the mail. While this reluctance to filing electronically exists, *other means are necessary to bridge the gap from paper filing to electronic filing. More than half the forms received by the Indiana Department of Revenue are computer generated.* This means that although the information was available in electronic format at one point, the tax payer is printing it off, which requires the Department to re-key the form, introducing errors, delaying the processing, and consuming data entry time and money.

Two dimensional bar coding bridges the gap by providing the speed and accuracy of electronic filing with the peace of mind associated with sending a traditional paper return. With the implementation of the client-server integrated tax system complete, the Department continues to look for ways to encourage more taxpayers to file returns electronically, using two-dimensional bar-coding, over the Internet, or other the Internet, or other ways that allow the processing of returns without manually inputting tax information. The graphics that follow illustrate that taxpayers are excited by the opportunities the Department is providing them to make communication more efficient.

What was Implemented in Indiana?

For the 1998 filing year, Indiana piloted the IT-40, individual tax form, with several software vendors to include a two-dimensional barcode. This form was chosen because of the volume of non-electronic returns, the narrow processing time requirement, and the large amount of data that needs to be captured. Because forms with the two-dimensional are printed rather than hand written, there is easily enough space on the top of the first page of the existing form next to the name and address. For the current tax year, the program was expanded to include the IT-40EZ and the IT-40PNR (part-year resident).

How Two Dimensional Bar-coding was Implemented?

The Indiana Department of Revenue, working with Andersen Consulting and Symbol Technologies, provided tax preparation software vendors with the piece of software (DLL) they needed to print the two dimensional barcode as they print a completed tax form. The tax preparation software is then used by individuals and paid preparers to complete their tax form (including schedules and up to 10 W2's). When the user decides to print, the complete tax form is printed with a two dimensional barcode in the upper right hand corner. This barcode contains all of the information from the Form, schedules, and W2s. The tax forms, schedules, and W2s are then signed and mailed as usual by the taxpayer.

When received by the Indiana Department of Revenue, the bar-coded returns and associated payments are scanned directly into Indiana's integrated tax system for processing. The integrated tax system contains the software necessary to decode and uncompress the data contained in the two-dimensional barcode. These returns are then validated for compliance, and then posted as any other return.

The project total cost was less than \$55,000 in scanning equipment, and took 200 workdays to complete. Additional forms will continue to be added with no additional hardware cost, and less effort than the pilot program. The software already provided to the software vendors can be reused for additional forms within the Indiana Integrated Tax system.

What Benefits have been Achieved?

Two-dimensional bar coding reduced errors and turn-around time for approximately 132,000 taxpayers during the 1998-filing year, while saving at least \$100,000. A batch of 90 paper returns typically takes 4 hours to key and validate. A batch of 90 bar-coded returns can be captured in 10-15 minutes with an error rate of less than two percent. This has allowed the Indiana Department of Revenue to stay current on scanning returns as they are received, and to immediately correct the errors.

In addition, the Department also incorporated the barcode into its free Internet filing program. Twenty-five percent of the taxpayers who completed a return over the Internet last year opted to print a hard copy for mailing purposes instead of sending it electronically. Taxpayers still receive most of the advantages of an electronically-filed return due to the inclusion of the barcode at no additional time or expense.

Indiana's success in implementing this project has been closely watched by other state revenue agencies throughout the United States. In 2000, other states,

including Illinois, Missouri, Delaware and Rhode Island, utilized the exact technology for their state returns.

When should this technology be deployed?

The greatest benefit of this technology will be received if this technology is deployed to tax forms where:

- There is a significant barriers to requiring everyone to file electronically or a requirement exist to receive a paper document including other evidence;
- The volume of returns prepared by computer before filing justifies the cost to develop alternative data capturing techniques

What is a Two Dimensional Barcode?

The Indiana bar code initiative makes user of two-dimensional bar codes. Ordinary or one-dimensional bar codes store data in a horizontal dimension, or left to right. The height of the bar code allows the code to be scanned from a variety of angles and distances, and allows for printing defects or damage. By decreasing the height of several one dimensional bar codes, and then on top of each other, a vertical dimension is added, creating a two dimensional barcode. Two-dimensional bar codes are read by moving beam scanners which raster, or scan the code from top to bottom. Error correction and data redundancy can also be built into the code to allow for printing defects or damage. The Indiana application is using Symbol Technology's PDG417 bar code, which allows 2000 to 3000 characters to be encoded in a single barcode approximately the size of a business card.

Who do I contact for more information at the Indiana Department of Revenue?

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Additional Information may be found online at:

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