



Payroll in 3-D

How flexible point-in-time techniques and "3-D" databases are changing payroll automation

By Uri Sherizly, CIO, Empower Software

If there's one unifying theme among HR and payroll professionals, it's that the systems they used ten years ago to manage their workforce don't meet their needs today. Payroll has come up as a particularly challenging area – as regulatory changes have become more complex and frequent, there is a greater demand to access and report on historical employee information. Plus, the dynamics of running a workforce today, with restructurings, M&A activity, and workforce reductions and subsequent rehires, and an increased use of independent contractors, make payroll more about information management and reporting than just “getting the checks out accurately and on time.” As a result, HR professionals, already overloaded with other responsibilities, have turned to a new breed of payroll solutions that provide user friendly, robust reporting and that leverage 3-D databases and point-in-time architectures.

What is a 3-D Payroll solution?

Just as 3-D TVs, movies and printers are replacing traditional two-dimensional options, a new breed of payroll solutions are embracing 3-D databases and information layers that leverage point-in-time architectures to help manage the complexity of their ever-evolving workforce. In this era of “3-D Payroll,” standard tables have been extended from two dimensions (rows and columns) to incorporate a third component – a continuous timeline of changes made to the table. What does that mean? It means that every record in the database is associated with an effective date and every change to an existing record results in adding a new record. Information is never deleted, lost or overwritten..

“Point-in-time” architectures, while not new in other industries, are a key factor in creating 3-D payroll solutions. They preserve the state of HR information and make it available on-demand.

| Traditional HR/Payroll Solutions | New 3-D Payroll Solutions |
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| Follows a “balance forward” doctrine where transaction information is retained only for a current period and then consolidated into an account total that is brought forward at the beginning of each subsequent period. | Analogous to “open-time” applications where individual transaction information is maintained for as long as the information is required, which, for payroll, may be seven or more years. |

What are the benefits of a 3-D Payroll solution to HR or payroll professionals?

A 3-D approach, or “point-in-time” architecture, is beneficial to HR and payroll professionals for several reasons:

- **Provides access to information at any point in time**
Users can “move back in time” and view the state of information on any day in the life of the system, without resorting to backups or paper reports. Users can run ad hoc reports, on-line, to reflect the information exactly as it was at the time they seek to report, exactly as the corporate structure was at the time and exactly as their security credentials were at that time.

Here are two examples of where access to information at any point of time can be helpful in payroll:

1. Reviewing assignments by department or job for a specific timeframe - List all employees who were assigned to Department 4011 and Job A11 on April 20, 2005.

2. Reporting by department/job/time and compensation - List all employees who worked in Department 6030 at any time during the period of March 23, 2006 thru July 11, 2008 and whose average hourly rate for the whole period was below \$9.75.

Users can also move “forward in time” and view information as it will be at any point-in-time in the future. Any information or data that is effective at a future time can be reported.

Here are two examples of how access to future-dated information can be helpful:

1. Provide employers a cost of benefits for a new plan year– summarize the number of employees in each benefit category, plan and plan level and multiply by the employer cost per employee. Run the report with an effective date of 01/01/2014 (assuming benefit plan rates have been updated with an effective date of 01/01/2014)
 2. Provide an estimate of the labor expense for a specific cost center in any subsequent pay period – list all active employees in cost center A-500 with their pay period salary as of the period end date = 12/31/2013 (or any date in the future).
- **Creates a more accurate audit trail**

Typical databases destroy data once an update or deletion is made. The core concept in point-in-time architecture is that no information is ever physically deleted or overwritten in the database. For instance, if John Doe’s compensation changes mid-year, the system adds a new compensation record for John while preserving the existing record. This allows the HR or payroll professional to see every time there was a change to John’s compensation record and exactly what was changed from one record to the next starting from day one when John was hired.
 - **Promotes continuous record-keeping**

Since data is never lost in a 3-D payroll system, payroll professionals can rest assured that the data will always be accurate and their reporting needs will always be met. Using the above as an example, since all data is maintained throughout the employee’s history, you can not only view and report on John’s compensation detail as of today, but also his records from 6-months ago, 2-years ago, 5-years ago or any timeframe needed.
 - **Provides visibility across a wide variety of employee data fields**

Managing a large number of data fields is essential for any payroll system – tax entities, pay entities, earnings codes, deduction codes, cost centers, work locations, employees, direct deposit information, etc. – but being able to search and report across those data fields as of any point-in-time (past, present or future), is where the true value lies. 3-d payroll solutions, unlike traditional payroll solutions, allow you to see not only who is currently assigned to department\cost center 100 but who was working in that department\cost center for the same time last year and what has been paid out in labor dollars for that department this year versus last year and to whom.
 - **Results in faster and more accurate reporting**

Since all information that has ever been saved to the database is available to you and all you have to do is tell a 3-D payroll system what date and data you want to see, you will be able to quickly and easily find and view/report on any information that you may need. Even if you don’t know the date in

question, you could simply view/report on all of the employee's records to see which one reflects the information you need and the effective date of that record.

- **Supports retroactive calculations**

Payroll professionals are often challenged by the need to record belated transactions such as rate changes or benefits elections. By having all the records available, with their own effective dates, a 3-D payroll system can accept late changes and determine their effect on employee pay and tax reporting. Most common challenges include retroactive pay rate changes that require the recalculation of prior checks and applying the difference as future payments to the employee. Similarly, prior quarter adjustments due to voiding erroneous or uncashed checks, after quarter end, require revised reporting which might trigger amended returns.

We are living in the 3-D world, where traditional HR and Payroll tools can't keep up with all the complex intricacies associated with payroll, compliance, and employee activity. Too often, we hear of HR and payroll professionals leveraging spreadsheets and manual reports to support retroactive calculations, conduct compliance reporting or model information in the future. Point-in-time architectures can provide a "new lens" on payroll data – where information is preserved, never deleted and available on-demand. The benefit of not worrying if information is correct or if an employee switches departments, changes their last name, moves to a new location, or receives a pay increase, is invaluable particularly for W-2s, reporting and budget planning. Consider payroll with an added dimension – a 3-D model that supports HR and payroll professionals for the complex needs of managing a workforce today.

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