



CASE STUDY: Workforce Logistics

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ALTOSOFT CASE STUDY – WORKFORCE LOGISTICS

A large provider of business services required a solution for real-time monitoring of workforce billing and payroll processing activities related to over 140,000 of its employees. The company processes payroll on a weekly basis, with only a single business day to enter, verify and process time sheets for each of the 140,000 employees. Failure to complete this process on time could cause delays in payroll release, resulting not only in employee dissatisfaction but also in potential fines and penalties from regulatory agencies. In order to ensure timely completion of the payroll, the company needed real-time visibility into how its payroll process was proceeding on an intraday basis. In less than one week, Altosoft delivered a solution that monitored timesheet collection and processing in real time and provided the company with advanced warning regarding any problems that would result in a risk that payroll processing activities would not be completed on time.

Challenge

A large provider of business services with over \$10 billion in annual revenue needed a solution to monitor weekly timesheet collection and payroll processing for over 140,000 of its employees. All employee timesheets needed to be entered, verified and processed before the company could process payroll for any employees. However, there was considerable complexity to this collection process:

- Time sheets had to be collected from employees based in a number of geographic territories.
- Once submitted, timesheets needed to be manually entered, reviewed and approved. Timesheets that weren't approved were moved into an exception process for issue resolution.

- The company had only a single day to collect and process all timesheets. Collection of timesheets listing employee hours, review and approval of those timesheets, auditing, and payment all be needed to be completed by the end of the same business day.
- If all timesheet processing was not completed on time, the company could not release its payroll. If payroll were not released, employees would not receive their weekly wages on time, leading to employee dissatisfaction and, depending on local regulations, potential fines and penalties for the company.
- Failure to complete timesheet processing during regular working hours could also force the company into paying significant overtime to their non-salaried workers who were required to stay until completion.

The company required real-time, intraday visibility into this timesheet collection process and automatic alerts if the pace of data entry and review were insufficient to complete the entire process on time. With enough advanced visibility, the company could address collections issues (e.g. a particular region failing to submit timesheets for some reason, the data entry pace too slow to complete all entry by the end of the day, etc.) and even preemptively increase staff levels to increase overall timesheet processing throughput.

An overall solution to the problem required:

- Real-time monitoring of timesheet collection and processing activities during each pay day.
- Ability to capture and analyze historical timesheet processing performance and human resource requirements for data entry.
- Ability to proactively identify “at risk” elements of the timesheet collection and approval process that were underperforming versus their required speed to meet the completion deadline.
- Ability to predict whether an active payroll process could be completed on time, factoring in both live, in-process data as well as historical processing throughput.

A traditional business intelligence (BI) approach could not realistically address these requirements. Traditional BI approaches require construction of a data warehouse, which is then updated from data sources on a regular basis. The average business intelligence system has a data latency of about 24 hours – meaning updating and recalculating the warehouse/cube takes place once a day. That level of data latency would not be acceptable in this scenario. While it is possible to reduce latency to less than 24 hours using traditional BI, the near real-time latency required here would be cost-prohibitive using a traditional data warehouse/BI approach. And even if latency could somehow be reduced to acceptable levels, a traditional BI-based solution would not give the company the predictive visibility it needed.

A business activity monitoring (BAM) approach was also considered. For this use case, BAM probably is a superior option to traditional BI since it delivers low-latency event monitoring. But BAM cannot deliver that data in conjunction with historical analysis of past payroll processing performance. This analysis was essential for the company to determine whether it was behind schedule, on schedule, or ahead of schedule with its payroll process.

In addition, BAM solutions typically monitor real-time events by calculating key performance indicators which are then measured versus target values. These solutions then deliver alerts via a variety of media if operations fall outside defined ranges. However, since they lack process awareness, BAM solutions cannot monitor individual process instances and detect if there is a problem or deviation from the normal flow of business operations. As a result, if an individual timesheet process were stalled, skipped a critical step, or otherwise encountered a problem, the BAM solution could not detect it and the error could fall through the cracks as it is averaged into a reported KPI figure that could include event data from thousands of other timesheet process instances. Finally, most BAM solutions have only primitive incident management capability, or nothing at all. As a result, a BAM approach was not a realistic option for the company.

Altosoft's Approach

Rather than replicate data from operational systems into a data warehouse, Altosoft's approach is to leave the data in place in existing operational systems. Altosoft first analyzed the historical data in the company's timesheet systems using its own highly optimized calculation engine. Historical timesheet and payroll process performance was converted into KPIs which were stored in Altosoft and can now be analyzed on an ad hoc basis.

On an ongoing basis, the Altosoft solution also monitors the real-time data being generated by the company's various time management systems on each pay day. Real time data is delivered as KPIs to company officials monitoring the timesheet collection and approval process. Data from the many company systems involved in the payroll process is refreshed in Altosoft on a minute-by-minute basis. The Altosoft system delivers dashboards where company management can track performance in real time, answering questions such as:

- How many timesheets have been collected so far?
- How is the collection process proceeding versus plan? Versus history?
- How is the approval process for timesheets proceeding?
- Are various regions performing as expected?

- Will the full run of timesheets be completed by the target deadline?
- Etc.

Alerts can be automatically generated if KPIs fall out of predetermined ranges. For example, if history suggests Belgium should have 60% of its timesheets processed by 1:00 PM, an alert could be triggered if Belgian performance were falling more than 10% behind the normal throughput at that time. Also, unlike BI and BAM solutions, Altosoft can monitor individual process instances. If there is an irregularity in a specific timesheet approval process instance, Altosoft can automatically identify that problem and trigger a corrective action.

Finally, the Altosoft solution also delivers accurate short-term operational forecasting. Predictions are based on current process states, real-time data and resource information, and historical process performance. This predictive analysis enables the company to monitor their ongoing timesheet processing on an intraday basis with an understanding of likely outcomes versus past performance. If the predicted outcome is that payroll cannot be completed on time, the company now has the visibility and time to take corrective action, such as adding more processing staff or resolving unanticipated operational bottlenecks.

Conclusions

Using Altosoft Insight, the company can now monitor its timesheet collection and payroll processes in real time. Leveraging Altosoft's predictive functionality, the company can now proactively anticipate problems with enough forward visibility to take corrective action. This ensures employee satisfaction, avoids unnecessary overtime expenses, and reduces the risk of fines and penalties from regulatory agencies. Altosoft was able to build a solution that supported the company's unique requirements in approximately one week.



About Altosoft

Altosoft Corporation provides Operational Business Intelligence solutions that enable private and public sector organizations to optimize their operational business processes. Unlike traditional approaches, Altosoft's Insight™ software automatically and continuously monitors and analyzes business processes, so that any issue that requires attention is immediately routed to a decision maker who can use that information to respond immediately to business opportunities or challenges.

Altosoft Corporation
3817 West Chester Pike
Newtown Square, PA 19073
www.altosoft.com

