Case Study:  
PPL Corporation’s Development and Implementation of a Settlement Hub

Background

PPL Corporation (PPL) is a Fortune 500 Energy Company headquartered in Allentown Pennsylvania. The parent Company serves as a holding Company for rate regulated delivery businesses in the United States and the United Kingdom, unregulated generation businesses in the United States, an energy marketing and trading business, and several smaller business ventures.

From a treasury standpoint, PPL represents your typical multi-divisional company with numerous “front offices” engaged in multiple business activities using many different front office systems. Treasury, in its back office role as the processor of corporate receipts and disbursements, has developed a workable means to consolidate the downstream database of this information for cash forecasting purposes but, like most other companies, utilizes multiple disbursement systems contained in the various front office ERP solutions such as Peoplesoft Payables for accounts payable, and Peoplesoft HR for the payroll disbursements.

PPL’s disbursement volumes range from hundreds of invoice-related disbursements each day to thousands during bi-weekly and monthly payrolls, to tens of thousands during the quarterly dividend. PPL processes 50,000 to 100,000 cash remittances each day arriving in the form of checks and electronic payments, and PPL originates approximately 10,000 direct debits each day originating from online bill presentment and automatic bill payment programs.

Current State of Treasury Settlement Processes

PPL believes that the business model deployed by existing ERP systems found in the market place is fundamentally flawed. This flaw traces back almost 20 years to when corporations generically got out of the software development business and turned to the then pubescent third party software development industry. The focus at that time was on delivering software solutions for the front office business applications and, in order to sell a comprehensive solution, the software developers built in sub-optimal disbursement capabilities with limited flexibility and, in many cases, weak internal controls. As these so called ERP systems have evolved, little has changed except that the complexities of new settlement payment options have significantly magnified downstream redundancies in the form of check, Fed wires, ACH payment options, remittance advices and other settlement documents for each separate ERP system.

Treasurers are typically required to cobble together databases to integrate projected and actual disbursement information, establish redundant receipt and disbursement functionalities with their banks, and interface with multiple front office systems for the exception processing activities performed by the Treasury Department (bounced checks, duplicate payment monitoring, bank reconciliations, etc.).

In Search of Payment System Convergence

In 2007, PPL’s Treasury department set out to redefine the business model for corporate commerce by achieving what some Treasurers and bankers refer to as “Payment System Convergence”. Unfortunately, after extensive research, they determined that there was no
existing software solution on the market offering a comprehensive and effective solution in spite of claims to the contrary from several vendors.

So instead, PPL’s Treasury Operations team and IT Organization turned to Enporion, a boutique third party software developer with extensive expertise in commerce related software, to initiate the development of a strategic solution.

The basic concept behind PPL’s vision is the recognition that at the end of the day all receipts and disbursements, no matter the originating front office share the same fundamental and easily definable characteristics:

- There is a payor and a payee for all commerce transactions – receivables and payables and resulting receipts and disbursements are the flip side of the same coin (i.e. the model deals with settlement obligations in an integrated platform – no separation of receivables/payables and cash receipts/cash disbursements).
- There is a finite amount of contractual data needed to effect settlement that include a preferred form of settlement (ACH, Fed wire, etc), payment terms regarding timing and discounts offered, and buyer and seller settlement information that determines the source and destination of funds.

PPL simply needed to develop a commerce platform that would allow all front office systems to pass all the required receipt and disbursement information into a common “Settlement Hub.” All bank and other settlement interfaces then integrate directly with this Settlement Hub. From this Settlement Hub, any third parties would be able to see the status of their payment obligations, and access dynamic discounting information to “renegotiate” their settlement terms in real time. Using this single Settlement Hub, Treasury’s former cash receipts and cash disbursements organizations would merge to become a single Cash Settlements Group using one and only one system to initiate settlement transactions and resolve settlement exceptions. There would also be a single feed from the Settlement Hub to the General Ledger for all journal entries that, when coupled with procedural changes in the front offices, would dramatically improve data capture regarding inter-company (inter-unit) transactions.

PPL’s Treasury team also added another simple but powerful design concept. Treasury would receive 100% of the Company’s invoices, convert paper invoices to digital data in a “Digital Mailroom” and populate the integrated commerce database with this information simultaneously (on the day of receipt) by passing it electronically to the front offices for review and approval. This would yield significant value in managing future cash flows by eliminating “lost” discounts as invoices sat on someone's desk in a front office. A view of PPL’s settlement hub design is shown on the following page.
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PPL’s Settlement Hub Business Model

Building the Settlement Hub and a Template for Plugging in the Spokes

With Enporion selected to develop the Settlement Hub, PPL’s IT Department simultaneously set out to develop a templated framework that is easily configurable to map, control and monitor disparate front office system, as well as other interfaces, into and out of the Settlement Hub. With this templated framework, the adding of additional front office data connections (or spokes on the wheel) is relatively simple and inherently well controlled, often with no changes to the front office application.

The project is being deployed in various phases throughout 2008 and early 2009 and to date, the early successes have been immediate and rewarding. For example, PPL implemented the digital mailroom in late 2007 that yielded instant improvements in year-end recording of payment...
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obligations. Treasury projects that by mid-year 2009, it will have reduced its back office costs by over 25% while yielding substantial improvements in internal controls.

The remainder of this document provides details regarding the business problems faced by typical corporate treasury organizations responsible for effecting financial settlement and how the Settlement Hub facilitates solutions to these problems.
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Highlighted Key Business Features of the Settlement Hub

PPL’s management team drew on over 30 years of business experience to fill in many of the details of the settlement vision to make the Settlement Hub a practical application. This experience included insights into opportunities on how to streamline processes and improve control models, as well as experience with pitfalls that can cause transaction problems and processing inefficiencies.

There are certain conceptual design features of the Settlement Hub that drive significant savings by themselves, such as the integrated settlement process for receipts and disbursements that enables an integrated staff for all settlements. However, the Settlement Hub design encompasses many practical features that collectively save considerable staff efforts and improve settlement control efficiency and effectiveness. The following highlights many of the features in five major Settlement Hub categories of functionality.

Capture and Set Up for PPL Commerce Parties

The Settlement Hub defines a Commerce Party (CP) as any party that PPL’s front offices do business with—including other PPL entities. The Settlement Hub recognizes that every commerce transaction has a buyer and seller and PPL is either on the buyer and/or seller side. In the process of capturing and recording the parties that PPL does business with, there were several control and efficiency improvement opportunities identified:

- **The Settlement Hub implements a CP matching process that attempts to prevent parties from being recorded multiple times, thus maintaining tight control over the CP file.** This addresses a problem common in many payable/disbursement operations whereby the same vendor or other party is recorded multiple times resulting in duplicated requests for W9 information, missed updates when addresses or banking instructions change, and other issues related to having a “vendor” file that gets out of control.

- **The integrated Settlement Hub CP database enables a holistic view of all PPL commerce activity for a particular CP, including all open payable and receivable positions.** There are many benefits to having all parties in one single database across the entire enterprise, but an example is the valuable information provided to credit risk management for understanding PPL’s comprehensive settlement position for a particular CP.

- **The Settlement Hub implements a powerful search feature for easily identifying a particular CP among the million plus CP’s with whom PPL does business.** The search incorporates “wildcard” search capabilities in practically every field, allows for the entry of many CP data fields to precisely refine search criteria, and leverages an efficient “text search engine” capability developed by Enporion for massive catalog searches with many millions of database rows.
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Record, Verify, and Provide Cash Flow Projections for PPL Financial Obligations

The Settlement Hub uses the term “financial obligation” to refer to the payables and receivables recorded in the same Settlement Hub database. There are many benefits of having payables and receivables in a common database and processed through a common control model with several key benefits highlighted below:

- **The Settlement Hub implements a common verification and control review process for all payables and receivables.** Of course, a key control for settling any obligation of a company is to ensure that the obligations are correctly calculated and properly authorized as legitimate obligations. This includes the ability to compare authorization levels to PPL’s Delegation of Authority System. The Settlement Hub provides for configurable verifications and edits that can be different across different commerce areas of the company. For example, a payroll payable can have different edit rules than a supply chain payable. Transactions that fail specified edits are loaded into appropriate work queues for resolution.

- **The Settlement Hub implements a Financial Obligation monitoring mechanism to help ensure that PPL settles obligations in a timely manner.** This includes monitoring PPL’s outstanding receivables to notify management so that PPL can initiate appropriate collection activities if receivables are at risk of late collection. This also includes the monitoring of invoiced payables for timely approval so that PPL can take advantage of favorable discount terms.

- **The Settlement Hub implements a common repository and reporting mechanism for projecting short term cash flows.** The Settlement Hub enables this feature through the storing of all payables and receivables in the same financial obligation database. In support of this cash flow reporting feature, PPL has also designed a “cash coding” mechanism that classifies all pending and actual cash flows that enables meaningful cash management information for a Treasurer.

- **The Settlement Hub enables automated linkage to appropriate Commerce Parties using a flexible CP match capability.** A common bottleneck process in a payables/disbursement operation is the “vendor coding” of invoices. The Settlement Hub uses a configurable match algorithm to automate the identification of ownership for invoices and vouchers so they “link” to the correct CPs, and the Settlement Hub places financial obligations without identified ownership on appropriate work queues for resolution.

Initiate Transactions for Commerce Settlement

The Settlement Hub includes a transaction initiator that selects, aggregates and formats transaction documents to facilitate the transfer of funds. The transaction initiator supports the construction, formatting and release of bills, checks, ACHs, Fed wires, remittance advices, and other commerce documents such as positive pay/payee files for check issuance control.
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- The Settlement Hub transaction initiator evaluates contracted and dynamic discounting settlement terms to ensure the most economical settlement. The transaction initiator evaluates all available terms as compared to PPL’s cost of capital, and then initiates transactions considering appropriate internal and bank lead times to ensure that settlement occurs on the target settlement date. The dynamic discounting feature, in particular, is especially valuable since a discount missed on day 10, for example, may not be lost completely because there can now be lesser discounts available on day 11, 12, etc.

- The Settlement Hub provides business rules to help ensure PPL’s NACHA compliance for originated ACH transactions. Currently, PPL has a diverse set of systems originating ACH debits and credits and PPL must monitor and update each affected system if NACHA rules change. With the Settlement Hub, PPL possesses a single system that generates all PPL ACH transactions—whether they are debits or credits (including Accounts Receivable—ARC transactions).

- The Settlement Hub provides for netting of payables and receivables, where applicable. Since payables and receivables are stored in the same database, the same transaction initiator also evaluates them. This enables payables and receivables to net against each other to help mitigate credit risk and reduce transaction costs. This feature is also useful for the settlement of inter-company payable and receivable positions which currently consume a considerable amount of effort in PPL’s financial reporting section and treasury.

- The Settlement Hub provides for aggregated transmission of EFTs to PPL’s banks, including ACH debits, ACH credits, and automated Fed wires. Each file provides for two levels of automated data transmission confirmation at the bank—the first at the file level and the second at a batch level from data within the file. Currently, PPL monitors and confirms multiple bank file transmissions with a mix of manual and automated confirmations, depending on the system source.

Recording of Settlements, Including Generation of Settlement Journal Entries

PPL receives a considerable number of cash receipts to record each day originating from its internal lockbox and other electronic payments. Therefore, the handling of exceptions for this recording process can be a significant effort since a small percentage of exceptions applied to a large number of daily transactions results in a relatively large number of exceptions to handle.

Accordingly, the Settlement Hub places a priority on making the handling of recording exceptions, such as identifying customer accounts to post, very efficient.

- The Settlement Hub provides all recording exceptions in the work queue system, with appropriate aging of the work queues to ensure timely handling of exceptions. The work queue aspect of the Settlement Hub provides PPL with a graphical representation of outstanding work by work queue so appropriate staff can be redeployed to ensure all work queues are effectively staffed and managed.
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- **The Settlement Hub provides for the recording and reconciliation of third-party settlements for PPL’s licensed payment service providers.** PPL has contracts with multiple payment providers that collect monies from PPL customers on behalf of PPL and provide posting data to PPL on a daily basis to credit customer accounts. PPL must monitor all of these contracts on a daily basis to ensure that customer account postings match cash receipts. The Settlement Hub automates this process by recording monies due as receivables and monitors the settlement terms, as with other receivables, for timely payment. If payment is late per the contractual terms, the Settlement Hub automatically alerts and escalates the late payment situation.

- **The Settlement Hub assigns appropriate accounting and provides journal entries to PPL’s general ledger.** This includes the recording of inter-company settlements that automate the process of resolving inter-company payable/receivable positions between PPL entities.

- **The Settlement Hub provides a convenient way to check settlement status.** This includes the ability for a PPL counter-party to check the status of their obligations. For the PPL settlement group, current and prior versions of settlement documents are available for review, including imaged settlement documents provided from PPL’s Digital Mailroom.

**Monitoring and Controlling the Movement of Data In and Out of the Settlement Hub**

As implied by its name, the Settlement Hub receives and disseminates a considerable amount of data to perform its settlement functions. On the input side, it must receive information about the PPL commerce parties from all front office business lines and the related financial obligations resulting from the commerce activity. On the output side, the Settlement Hub communicates initiated settlement transactions to PPL’s banks and to PPL’s internal check and bill printing applications. The Settlement Hub also provides settlement accounting journal entries to PPL’s general ledger while providing front office systems with information about the resulting settlements so the respective front offices can post the settlement activities against their respective accounts.

Therefore, as part of PPL’s business case to improve control and efficiency, PPL’s Treasury provided control and monitoring specifications to PPL’s IT organization for developing a Settlement Hub data interface monitoring and controls system. This system, in conjunction with PPL’s purchase data integration mapping tool, provides for a very robust and flexible tool for ensuring that data can be moved in and out of the Settlement Hub efficiently and effectively.

- **The Settlement Hub Interface Control and Monitoring System provides controls to help ensure accurate and timely delivery from the data sources to the data destination.** This feature of the Interface Control and Monitoring System (ICMS) accepts data in configurable formats from a data source, and monitors the movement and delivery of the data until the destination confirms the receipt of data.
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- The Settlement Hub Interface Control and Monitoring System provides file verifications to help ensure that appropriate data is originated from the source and received by the destination. In performing this function, the ICMS also monitors for unusual transaction volumes, abnormal dollar volumes and it checks for possible file duplication. ICMS also maintains an expected data movement schedule that allows ICMS to detect a missing data movement.

- The Settlement Hub Interface Control and Monitoring System provides an exception based notification system along with a dashboard for “at a glance” confirmation that all interfaces are working as intended. The ICMS exception notification design supports providing exceptions to a Settlement Hub work queue, thus enabling PPL’s Treasury to monitor all controls inside the Settlement Hub system (including interface controls). ICMS also can communicate exceptions through emails and other notification techniques.

**Other Beneficial Settlement Features**

The Settlement Hub implements many other features that PPL recognized as productivity enhancers that include:

- a monitoring mechanism with performance metrics to track transaction errors and process volumes against expected desired performance targets,
- versioning of all settlement records to support a company’s record management processes, as well as provide a complete history of all settlement activity,
- appropriate security roles so that segregation of duties is maintained throughout the system, and
- automated evidence of control to facilitate Sarbanes-Oxley compliance.

PPL is very committed to the business model enabled by the Settlement Hub and believes that the processes that the Settlement Hub implements will become common practice across corporate America for the reasons outlined above.

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PPL Finance Department