

Reducing Procurement Costs While Improving Quality



**How state-of-the-art e-commerce re-engineers business process
to create new efficiency that improves healthcare quality
and value while reducing spend transaction costs**

Reforming business process to reduce costs, enhance service quality, and improve value is common practice in most sectors. Sadly, in the area of supply chain management, prevailing healthcare culture has traditionally prevented hospitals, RHIOs, LHINs, regions, and their merchants from achieving significant and sustainable progress toward all three objectives simultaneously. Meaningful advancement can be achieved by redressing fundamental inefficiencies in typically disparate supply chain processes, reluctant adoption of non-clinical technology advancements, and lack of real-time communication. Due to the systemic nature of these problems, the solution must necessarily focus on the re-engineering of core business processes to generate new labor efficiencies that yield considerable supply chain savings for both buyer and merchant.

This white paper details the loaded costs of the traditional healthcare supply chain and examines a new paradigm driven by state-of-the-art e-commerce. The automated and integrated ORMED X *Easy Pay*[™] process converges business processes and employs a single, shared, electronic document from source to settlement. Without impacting the buyer's cash flow for 30 to 45 days, *Easy Pay* facilitates the immediate payment of merchants upon receipt of goods and electronic matching of the PO, receiving, and invoice. *Easy Pay* reduces supply chain costs by accelerating spend transactions and increasing process efficiency. It enhances service quality by reducing errors and delays. A dynamic supply chain model, it improves value by reducing spend transaction costs while boosting staff productivity, and was developed and implemented collaboratively by thought leaders in integrated healthcare MIS software, banking, and payment processing.

By

Dale Gregg

Chief Technology Officer and
Senior Vice President, Development
dale_gregg@ormed.com

July 2006

Introduction

Healthcare costs continue to outstrip revenue growth while demand for quality service and value continues to escalate. The ability to realize substantive, sustainable cost savings and, at the same time, increase value by enhancing patient outcomes and experiences remains a worthy goal across the healthcare sector, albeit an elusive one to date.

Since supply and equipment costs are a hospital's second largest operating expense and among the largest for merchants that serve the healthcare market, finding new ways to reduce these costs is a high priority given the demand pressures on the sector. Early-pay and volume discounts – through consolidated demand planning and group purchasing organizations – can get us part of the way. However, far and away the largest savings opportunities lie in re-engineering business process from source to settlement to take full advantage of the Internet's unique potential to automate and integrate the supply chain's typically disparate processes – requisitioning, procurement, receiving, payment, and reconciliation – without escalating the growing problem of information overload.

In procurement, for example, increasing reliance on e-mail by hospitals, RHIOs, LHINs, regions, and the merchants who serve them represents, in some ways, a significant improvement over previous models (printed catalogs, voice-mail, faxes, phone calls, documents by mail, and personal visits). E-mail is certainly faster and *should* generate less paper (unless e-mails are printed and handled as hardcopy documents, which is often the case). However, e-mail itself is perpetuating the growing problem of information overload, with serious costs to effectivity and productivity in today's high-pressure healthcare settings. Likewise, although the internet has had a somewhat different impact on the procurement framework, it presents much the same problem. The fastest communication resource available to the general population, the internet has dissolved the geographical borders that largely limited the sourcing of materials. But, with so much information so easily accessible online, information overload is fast becoming a detrimental concern... particularly for buyers.

Consider the following scenario:

A hospital needs a long wave ultrasound physiotherapy device. In seconds, an indiscriminating Google search reveals about 67,000 pages of information and possible sources for this product.



Web Results 1 - 10 of about 67,000 for [long wave ultrasound physiotherapy device](#). (0.38 seconds)

© 2006 Google

The buyer scans through the first few pages and e-mails a request for quotation (RFQ) with blind carbon copies to five merchants. Over the next three days, the responses to this request crisscross another 30 RFQs and more complex requests for proposal (RFP). Dozens – even

hundreds – of disconnected and inconsistently formatted e-mail messages, quotes, and queries quickly clog the buyer's e-mailbox. With each passing day, the complexity of this one stage of the source-to-settlement process increases exponentially. On a daily basis, the buyer undertakes the time-consuming task of opening, reading, and sorting incoming e-mails into folders to better organize workflow. Days of disconnected threads of e-mail soon become overwhelming, particularly with a daily onslaught of new e-mail to handle. The manual effort of analyzing heterogeneous quotations and proposals is a nightmare, and the busy buyer is resigned to take the path of least resistance: either buying the product from the first merchant that responds with a subject line that makes sense or reverting to old modes of communication – the phone and the fax.

Clearly, today's information systems have the ability to supply an abundance of valuable information. But as standalone information sources, they can be so disconnected from business process flow that they contribute to inefficiency rather than resolve it. Much of their data requires hours of manual, repetitive, error-prone effort and reconciliation that adds unnecessarily high process costs up and down the entire supply chain.

What is needed is a new paradigm that builds on the strengths of the Internet and e-mail without the costly side effects of information overload and potential for errors.

Bird's eye-view: the total supply chain

Having the right equipment and supplies at the right place at the right time is critical to ensuring quality patient care and positive outcomes. Supplies can make up as much as 25 per cent of a hospital's operating budget and can cause unnecessary costs and risk to patients if not handled properly. An inefficient supply chain impairs the ability of caregivers to improve patient care and creates financial stress on an increasingly overburdened, under-resourced health system.

It is important to consider the scope of the supply chain itself and to what magnitude process costs contribute to aggregate supply chain costs. Traditional, manually intensive supply chain processes are inefficient, inflating spend transaction costs and diverting time, money, and focus away from direct patient care. A sizeable proportion of these costs is attributable directly to the time spent completing a transaction from start to finish. Typically, this includes manually creating, moving, and responding to numerous support documents on each order, such as a requisition, a purchase order, and one or more packing slips, invoices, statements, payments, and reports.

Furthermore, an estimated 60 per cent of hospital orders contain errors that require troubleshooting and reconciliation effort that bumps up the transaction cost by the minute. Later, the purchase order, receiving, and invoice must be reconciled before the payment is processed, and then bank statements must be reconciled before useful financial statements – that report performance and inform future supply chain decision-making – can be produced.

Here's a snapshot of the traditional procurement model for healthcare and its costs to the total supply chain:

1. Requisitioning

| | |
|-----------------|--|
| Hospital Tasks: | Create, process, and distribute a hardcopy requisition |
| Costs: | \$2 to \$50, depending on the level of automation |

2. Sourcing

Hospital Tasks: Create, distribute, and analyze multiple responses to tender document (RFQ, RFP)
Merchant(s) Tasks: Respond to tender document
Costs: Can exceed \$100,000 across the supply chain (buyer and multiple merchants), depending on the complexity of the tender document and the number of merchant respondents

or

Hospital Tasks: Search the web, select one or more potential merchants, and request quotes by e-mail
Merchant(s) Tasks: Respond to request for quote
Costs: With billions of websites and thousands of potential suppliers, the cost of open web-based sourcing quickly accrues from minutes to hours, with time lag between e-mails, responses, and decisions

or

Hospital Tasks: Decide to buy from a previous source, or on a contract or Prime Vendor Agreement
Costs: May not net the best price and arrangements available, and, earlier, there would have been up-front costs similar to an RFP or RFQ

3. Purchase-to-Payment

Hospital Tasks: Create, process, and distribute purchase order, receive order acknowledgement, receive ship notice, receive goods, reconcile and process the invoice, pay the merchant, reconcile bank statements
Merchant Tasks: Receive, process, and acknowledge and respond to purchase order, issue ship notice, create and issue invoice, and receive and process payment, reconcile payment to order
Costs: Can range from \$150 to \$300, depending on the amount of reconciliation required

Even with the promise of e-mail and the Internet to reduce paperwork and increase communication speed, little progress has been made in terms of net gains from new efficiencies. It is easy to see why. E-mail and the Internet have failed to systemically change business process – for the most part, they have simply replaced other communication models, with little or no impact on the bottom line. As only the price paid for equipment and supplies is recorded on financial statements, it is easy to bypass process efficiency strategies in favor of attempting to obtain price reductions. Sadly, many fail to comprehend that the latter can be a logical outcome of the former.

Consider this. While savings can be realized by trenchant price negotiation, bulk purchasing, and relatively prompt payment, buyers' savings on these terms occur only as merchants oblige. But if the terms could be made to actually reduce the merchant's workload and process costs, buyers would have a strong, cogent argument for lower prices to which merchants may be more amenable.

Likewise, it may seem relatively easier to believe that understaffing, morale, and productivity issues can be resolved by hiring more FTEs rather than digging deeply into business processes to ferret out the inefficiencies that perpetuate the need for more FTEs. No one wants to rock the boat but, at the same time, healthcare facilities are experiencing and anticipating critical, care- and outcome-impacting staff shortages in less than a decade. That's why process re-engineering is a timely solution today.

Obviously, **the faster and more accurately a transaction occurs, the less it costs.** Any new procurement model that aims to significantly reduce supply chain costs must view as its primary objective a convergence of business processes to reduce unnecessary steps, time lag, and errors. Automation and integration of relevant processes can reduce the amount of time spent by both parties from start to finish of every transaction. As each manual touch is an opportunity for error, automation and integration reduce the opportunity for error by reducing the number of manual touches involved in every transaction from source to settlement.

By considering the cost of all supply chain processes as the **loaded cost of goods** (for buyers) and **loaded cost of sale** (for merchants) for the purpose of identifying savings opportunities attributable to new efficiencies, a more complete picture of actual supply chain costs emerges. For the buyer, this loaded cost includes the price paid for the item as well as the cost of staff time for sourcing, approving, purchasing, receiving, reconciling, accounts payable, and issuing payment for the goods. This loaded cost can be as high as \$150 per purchase order. Additional supply chain costs to the buyer include inordinate amounts of time spent creating and issuing RFPs and RFQs and analyzing responses from multiple merchants, not to mention the cost of outsourcing these activities to third-party consultants and Group Purchasing Organizations, an extended process that can cost the buyer thousands of dollars in each instance. For the merchant, the loaded cost includes the cost of manufacturing or purchasing the item as well as the cost of getting it to market, promotion, selling or reselling, shipping, invoicing, reconciling, accounts receivable, and collections. If an RFP or RFQ is the case, the total cost to the supply chain can easily reach tens of thousands of dollars in each instance.

Common Practice

Before considering a better way to transact business, let's break down today's supply chain costs. Keep in mind that the majority of process cost is time-based. For the sake of this demonstration, we will use \$27 per hour for the employee cost (including benefits), then add the cost of supplies (e.g., paper copies) and communication (e.g., fax, phone, e-mail).

Based on the experiences of our clients, we isolated traditional supply chain processes and costs as follows:

TRADITIONAL PROCESS: HOSPITAL (BUYER) ASSUMPTIONS

| <i>Task</i> | <i>Hours</i> | <i>Cost</i> |
|---|--------------|-------------|
| Prepare Surveys to send to responsible parties (to obtain usages) | 4.00 | \$109.16 |
| Retrieve usages from Materials Management and respond to Surveys | 8.00 | \$218.32 |
| Follow-up on outstanding Surveys | 1.00 | \$27.29 |
| Review volumes, verify and do packaging conversions | 1.25 | \$34.11 |
| Data enter usage volumes | 3.50 | \$95.51 |
| Receive and review Survey | 0.50 | \$13.64 |

| | | |
|---|-------|----------|
| Prepare Tender Document | 5.00 | \$136.45 |
| Retrieve, pre-screen, and sort submissions from multiple merchants | 4.00 | \$109.16 |
| Data enter item bid pricing | 6.00 | \$163.74 |
| Do financial and logistic analysis | 4.00 | \$109.16 |
| Communication related to entire process | 4.00 | \$109.16 |
| Notify merchants of awards (finalize Contract, prepare award lists/letters) | 3.00 | \$81.87 |
| Notify buyers of – and manage – Contract updates | 1.00 | \$27.29 |
| Update internal inventory control systems | 3.50 | \$95.51 |
| Generate management reports of statistics, finance, and KPIs | 1.00 | \$27.29 |
| Enter new vendor and pricing for MM Catalog | 14.00 | \$382.06 |
| Fulfill Purchase Order (from requisitioning to receiving) | 5.50 | \$150.09 |
| Expense code and reconcile Invoice (per merchant) | 2.50 | \$68.22 |
| Process payment and do cash flow analysis (per merchant) | 1.00 | \$27.29 |

TRADITIONAL PROCESS: MERCHANT(S) ASSUMPTIONS

| <i>Task</i> | <i>Hours</i> | <i>Cost</i> |
|---|--------------|-------------|
| Search, qualify, and download Tender Documents | 1.00 | \$27.29 |
| Analyze Tender Documents; distribute item work to appropriate departments | 2.00 | \$54.58 |
| Respond to Tender Document (per Document) | 12.00 | \$327.48 |
| Edit and compile submission (per Document) | 8.00 | \$218.32 |
| Print package and send | 3.00 | \$81.87 |
| Accept Contract and update sales systems | 3.00 | \$81.87 |
| Accept Purchase Order and correct pricing (per Purchase Order) | 0.50 | \$13.64 |
| Prepare Shipping Notice and Invoice (per Purchase Order) | 0.30 | \$8.19 |
| Respond to receipt discrepancies | 0.50 | \$13.64 |
| Prepare Invoice and Statement (per hospital) | 0.50 | \$13.64 |
| Manage collection of receivables (per hospital) | 1.00 | \$27.29 |
| Reconcile payment (per hospital) | 1.00 | \$27.29 |

It was clear that the process costs of a single transaction added up quickly as the transaction moved through the supply chain cycle. Multiply that by thousands of transactions each year and annual spend transaction costs were capable of quickly depleting a hospital's finite budget without any net gains in terms of quality patient care and outcomes. While we already offered hospitals integrated MIS software that increased business process efficiency, we came to a decision to help hospitals drastically reduce costs without negatively impacting patient care and outcomes or creating information overload.

The untapped potential of e-commerce to increase efficiency and reduce supply chain costs is where we started looking for an innovative process-centric solution.

Innovative Idea: A fully integrated supply chain from source to settlement

Ormed set out to develop a new, more efficient e-commerce business process where: hospitals and merchants would share a single electronic document; no information would ever be re-keyed; all communication could occur online in real-time; any authorized stakeholders could participate anywhere in the world; current proven technology would be used; and the merchant

would be paid immediately for goods received by the hospital without negative impact on the hospital's cash flow.

The first revelation we had was that the transaction data we were tracking remained constant – for both the buyer and the merchant – from source to settlement. It simply went through state changes as the transaction proceeded from requisition to sourcing, purchasing, receiving, and, finally, settlement. What was needed was a secure, central point where both the hospital and the merchant could share and evolve the necessary information.

To achieve the first goal, we looked to an existing e-commerce solution (the ORMED X[®] B2B internet portal) where hospitals and merchants were already conducting e-commerce in real-time. Because ORMED X is a truly independent, buyer-centric exchange, merchants could choose to connect directly with ORMED X or use existing interfaces through CareNET and Emergis, GHX, or Neoforma. (Should other exchanges form in the future, Ormed had committed to interfacing to them, as well.) This was granting buyers access to the largest merchant community with which to transact business. ORMED X also offered a secure, spam-free way for buyers to send orders to any merchant, worldwide, that had a valid e-mail address. By automating and integrating essential business processes, this e-commerce solution was already streamlining the supply chain (over traditionally labor-intensive and paper-based procurement systems) by reducing the amount of data entry time, errors, arduous reconciliation work, and information overload that typically plague hospital support staff. This, in turn, was reducing overall supply costs and inventory investments.

ORMED X kept all communication linked to the business process so buyers could view responses from multiple merchants without having to search through a mailbox of unrelated information. Unlike a faxed purchase order, merchants could reply and the buyer could use one interface to handle all orders electronically no matter how the merchant was connected. An ongoing order status with history kept all stakeholders informed.

Further, ORMED X was enabling hospitals to reduce the cost of supplies and equipment by joining or creating their own buying community to consolidate demand, qualify for greater volume discounts, and reduce the manual work of tendering, contracting, and purchasing for all members. All the tools needed for time- and cost-saving group purchasing were already available at the portal. Hospitals could form a Group Purchasing Organization (GPO) connected by e-mail and the portal and survey members for projected usages. Any GPO member hospital could issue a single, electronic tendering document (RFP, RFQ) for projected consolidated demand for the GPO and analyze online the consistently formatted bids that arrived in response. Contracts could be awarded and members notified automatically, contracts could be updated electronically, and members could make purchases and monitor compliance online. Existing GPOs could easily integrate into this model once contracts have been formed. All members could effectively ensure their item file information was updated with current contract information.

The need for time-consuming, expensive data cleansing or item file synchronization with merchants had been eliminated. When a purchase order or RFQ was created and sent to one or more merchants, each merchant attached an item from their catalog and ORMED X automatically mapped the hospital's request to the merchant's catalog number. This, as well as any contract information, was stored in the map file. Unlike a fax or manual process (where this information had to be sourced by the merchant on each order), this efficient process was only done once.

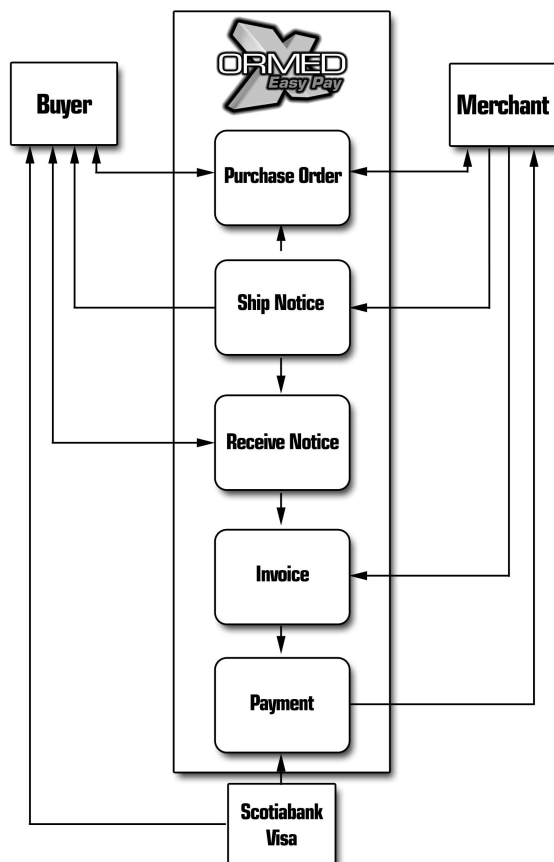
After a merchant had linked their catalog item by responding to an RFQ or purchase order (or, even after the invoice), ORMED X automatically mapped that merchant's catalog number and

description to the client item number. Future orders with mapped items would be displayed to the merchant with their catalog information and description. Flexibly, the merchant could view the source document item number and description at any time, and easily maintain substitutions and merchant catalog numbers. This information – and history – was viewable by the client who was also free to use the merchant’s catalog information to electronically update their item file information.

In addition, ORMED X was found to be the only portal to successfully integrate hospital software from source to settlement. Because Ormed had fully integrated the ORMED MIS product line, ORMED X had defined all the data elements required for communication of each business process performed in the fulfillment of each transaction, from item quotations, purchase orders, and contract updates to shipping notices and invoice reconciliation with payment. Having all the data elements defined for the required interface or integration specifications was reducing the time and cost required to integrate or interface non-ORMED MIS clients to ORMED X.

Achieving the second goal was a bit more difficult. Even when hospitals do electronic funds transfer today, the payment process can still take days or weeks – in some cases, months – to complete. A new payment system was needed whereby items were immediately paid for when received in good order and the invoice was reconciled to the receiving and original purchase order as well as the contracted price.

To accomplish this using existing technologies, we created a three-way partnership: ORMED X (as above), Scotiabank’s Visa* Commercial Card, and Chase Paymentech Solutions, the world’s largest transaction interchange. Because 650,000 merchants were already transacting through this portal, creating this partnership seemed the most logical choice.



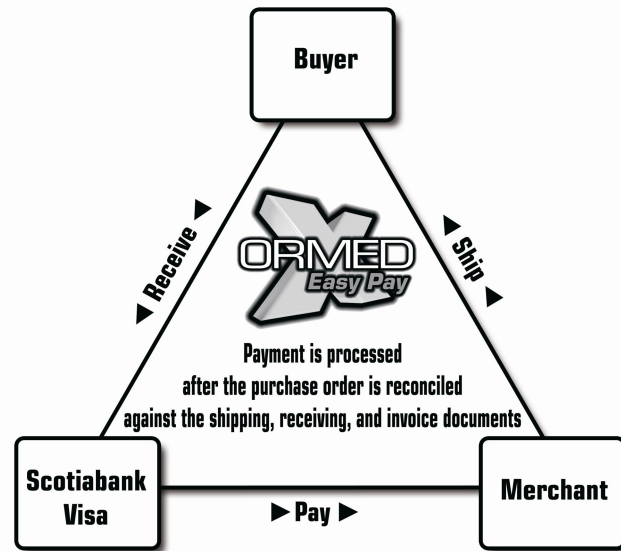
The result is an innovative, unique e-commerce business process (**ORMED X Easy Pay™**) that allows hospitals to automatically reconcile and pay electronic invoices immediately upon confirming receipt of goods and the electronic matching of the purchase order, receiving, and invoice. An evolution of the increasingly popular purchasing card (P-Card) system, the *Easy Pay* process draws upon a \$100 million credit facility – Scotiabank’s Visa* Commercial Card platform to pay the merchant upon receipt of an electronic receiving notice at the ORMED X portal.

Although the merchant is paid immediately, the hospital has 30 to 45 interest-free days before making a single, electronically reconciled payment to Visa instead of manually reconciled payments to many merchants and countless invoices.

The hospital’s accounts payable function is fully automated, as is the merchant’s accounts receivable.

Every supply chain process occurs online – from requisitioning, sourcing, and purchasing to ongoing communication, invoicing, reconciliation, and payment – and nearly every step in the new e-commerce process is automated.

Merchants can create online catalogs, with product descriptions and pictures. This significantly reduces errors for the hospital and confusion for the merchant when catalog items are used in a requisition or purchase order. Requisitioning or purchasing is a simple matter of point-and-click. All stakeholders share a single electronic document from source to settlement. Information is entered once then shared and edited by authorized users as the transaction progresses. This eliminates the need for repetitive data entry and manual reconciliation and the possibility of errors... a huge time-waster. The electronic requisition, purchase order, confirmation, shipping notice, and invoice are automatically generated from this single record. Hardcopy is available, but not necessary. Most importantly in terms of process savings, nothing is ever entered twice.



Price, quantity, item substitutions, taxes, and delivery terms are electronically confirmed, reducing workload and delays by reconciling invoices and payments before the goods ship. Electronic adjustments automatically update the purchase order throughout the spend transaction, speeding payment and reducing workload by eliminating manual coding, reconciliation, and payment because the purchase order, shipping notice, receiving, and invoice are electronically reconciled *before* payment is made. This four-way matching increases accuracy and allows for faster, more efficient business overall.

Interfacing and integrating are simplified. The philosophy ORMED X has in interfacing stakeholders is unique, as it can support any known interface transport protocol while most other internet portals ask stakeholders to connect via EDI, XML, ANSI X12, etc., forcing stakeholders into a time-consuming development cycle to comply with the internet portal standard interface. Each of these interface standards are good and work, but each stakeholder has adopted their own standard (within one of the common standards) or they wish to connect using flat file imports and exports from their order desk software.

In ORMED X, the data elements and events have been defined. With MS BizTalk Server used as a translator and all common interfaces already mapped, it's a simple task to translate incoming and outgoing data transport protocols or flat file transfers to the defined data elements. For example, if a merchant already supports the EDI standard interface, ORMED X can very quickly create a listening port to accept and translate these documents into the defined data elements required by the portal. The same merchant may only be able to receive purchase orders and not send shipping and invoice information the same way. If the merchant can produce these documents in any file format, ORMED X can accept and translate these as if a standard was used. If a merchant can't send or respond to all required events, ORMED X has an interface for each stakeholder to view, edit, and create these events directly on the portal to complete each required task.

The portal interface can be used in whole or part to complete, edit, create, or respond to any business process required to ensure payment is received as soon as the hospital has accepted the goods and reconciled the shipping and invoice information. Buyers and merchants can ask for e-mail notifications to be sent whenever there is a transaction requiring their input. Stakeholders can participate in complete e-commerce from source to settlement with any level of automated interfacing or direct integration at which they feel comfortable.

Because the merchant is paid immediately upon the hospital's confirmed receipt of goods and the hospital has 30 to 45 interest-free days before payment is due, the merchant has no accounts receivable and collections costs and the hospital's cash flow has not been negatively impacted. It's a win-win solution all-round. The hospital issues a single payment to Scotiabank Visa each month, instead of thousands to all merchants. This minimizes bank reconciliation time and errors, along with other payment costs for the hospital as well as accounts receivable and collections costs for the merchant.

All transaction communication occurs online in real-time, eliminating e-mails, faxes, telephone tag, and other costly delays.

Potential benefit to the healthcare supply chain

By taking the supply chain to a higher performance level, the *Easy Pay* process dramatically reduces transaction costs from source to settlement and represents a significant advancement in efficiency for the healthcare supply chain, as detailed below, again using \$27 as the employee cost, plus supplies and communication:

NEW PROCESS: COST SAVINGS TO HOSPITAL (BUYER)

| <i>Task</i> | <i>Hours</i> | <i>Cost</i> | <i>Savings</i> | |
|---|--------------|-------------|----------------|------|
| Prepare Surveys to send to responsible parties (to obtain usages) | 3.00 | \$81.87 | \$27.29 | 25% |
| Retrieve usages from Materials Management and respond to Surveys | 0.50 | \$13.64 | \$204.67 | 94% |
| Follow-up on outstanding Surveys | 0.10 | \$2.73 | \$24.56 | 90% |
| Review volumes, verify, and do packaging conversions | 0.50 | \$13.64 | \$20.47 | 60% |
| Data enter usage volumes | 0.00 | \$0.00 | \$95.51 | 100% |
| Receive and review Survey | 0.10 | \$2.73 | \$10.92 | 80% |
| Prepare Tender Document | 1.50 | \$40.95 | \$95.51 | 70% |
| Retrieve, pre-screen, and sort submissions from multiple merchants | 0.00 | \$0.00 | \$109.16 | 100% |
| Data enter item bid pricing | 0.00 | \$0.00 | \$163.74 | 100% |
| Do financial and logistic analysis | 2.00 | \$54.58 | \$54.58 | 50% |
| Communication related to entire process | 1.00 | \$27.29 | \$81.87 | 75% |
| Notify awarded merchants (finalize Contract, prepare award lists/letters) | 0.20 | \$5.46 | \$76.41 | 93% |
| Notify and manage buyers of Contract updates | 0.10 | \$2.73 | \$24.56 | 90% |
| Update internal inventory control systems | 0.10 | \$2.73 | \$92.97 | 97% |
| Generate management reports of statistics, finance, and KPIs | 0.50 | \$13.64 | \$13.64 | 50% |

| | | | | |
|---|------|---------|----------|------|
| Enter new vendor and pricing for MM Catalog | 0.10 | \$2.73 | \$379.33 | 99% |
| Fulfill Purchase Order (from requisitioning to receiving) | 1.10 | \$30.02 | \$120.07 | 80% |
| Expense code and reconcile invoice (per merchant) | 0.00 | \$0.00 | \$68.22 | 100% |
| Process payment and do cash flow analysis (per merchant) | 0.00 | \$0.00 | \$27.29 | 100% |

For buyers, the new process has reduced the amount of time spent procuring equipment and supplies. Some business processes have been completely removed, including the need to manually code invoices, reconcile invoices to receiving and purchase orders, issue checks, and manage a large vendor list in accounts payable. The new process is not only efficient at procurement but also an efficient and streamlined cash management system that removes the need for the Accounts Payable to manually reconcile the purchase order and the receiving documents to the invoice, and consolidates all invoices, from all *Easy Pay* merchants, into a single reconciled payment. If *Easy Pay* users also use ORMED MIS Materials Management and Accounts Payable software, they have a completely automated purchasing system. With Ormed's fall 2006 release, hospitals will be able to send, receive, and adjust requisitions and purchase orders and send receiving adjustments with credit requests and payments through ORMED X to any merchant connected to ORMED X, GHX, or CareNET, or transact with any merchant in the world with a valid e-mail address.

The possibility of fraud has been eliminated because the system was built using existing Visa technology enhanced by ORMED X, which acts as an escrow agent for every transaction. Each transaction occurs over a server-level, trusted connection to Chase Paymentech Solutions, and the merchant and the payment card is a ghost to all except Scotiabank Visa. (The card can only be used through ORMED X portal.)

The following table records the time and cost savings available to *Easy Pay* merchants:

NEW PROCESS: COST SAVINGS TO MERCHANT(S)

| <i>Task</i> | <i>Hours</i> | <i>Cost</i> | <i>Savings</i> | |
|--|--------------|-------------|----------------|------|
| Search, qualify, and download Tender Documents | 0.00 | \$0.00 | \$27.29 | 100% |
| Analyze Tender Documents and distribute item work to departments | 0.25 | \$6.82 | \$47.76 | 88% |
| Respond to Tender Document (per Document) | 4.00 | \$109.16 | \$218.32 | 67% |
| Edit and compile submission (per Document) | 0.00 | \$0.00 | \$218.32 | 100% |
| Print package and send | 0.00 | \$0.00 | \$81.87 | 100% |
| Accept Contract and update sales systems | 0.10 | \$2.73 | \$79.14 | 97% |
| Accept Purchase Order and correct pricing (per Purchase Order) | 0.10 | \$2.73 | \$10.92 | 80% |
| Prepare Shipping Notice and Invoice (per Purchase Order) | 0.00 | \$0.00 | \$8.19 | 100% |
| Respond to receipt discrepancies | 0.00 | \$0.00 | \$13.64 | 100% |
| Prepare Statement (per hospital) | 0.00 | \$0.00 | \$13.64 | 100% |
| Manage collection of receivables (per hospital) | 0.00 | \$0.00 | \$27.29 | 100% |
| Reconcile payment (per hospital) | 0.00 | \$0.00 | \$27.29 | 100% |

The new process has reduced the time required to respond to tender documents, faxes, and phone calls, and has removed the need for Accounts Receivable clerks to look up invoices and phone customers about outstanding payables. Merchants freely reach a target audience ready, willing, and able to buy. Their marketing costs are lower, they have no collection costs, and the total cost-of-sale has been reduced.

Now you have a level playing field where price negotiation can fairly reflect savings to both parties.

Group Purchasing Organization (GPO)

To maximally reduce the cost of supplies and equipment, *Easy Pay* hospitals can join or create their own buying community to consolidate demand, qualify for greater volume discounts, and achieve economies of scale that further reduce the manual work of tendering, contracting, and purchasing for all members. Ormed provides a full set of GPO tools that enable members to: form a GPO connected by e-mail and ORMED X; survey members for projected usages; issue a single tendering document (RFP, RFQ) for projected consolidated demand; analyze bids; award contracts and automatically notify all members; update contracts electronically; make purchases; and monitor compliance.

ERP System Integration

The flexibility of the *Easy Pay* process and the ORMED X portal gives buyers and merchants the option of accessing services through their own Internet browser or integrating ORMED X directly to their internal ERP systems. ORMED X operates on industry-standard EDI transactions sets or native XML, allowing hospitals and their merchants to tie the most sophisticated or arcane information system directly into the orders.

Ormed's partnership with Chase Paymentech Solutions, LLC brings 650,000 merchants to the ORMED X portal, all with the ability to send and receive information electronically with *Easy Pay* buyers. Because ORMED X is designed for buyer-centric functionality, merchants can choose their level of interface or integration. All merchants appear to *Easy Pay* buyers as fully e-commerce enabled for RFQs, RFIs, RFPs, purchase orders, shipping notices (with tracking), and electronic invoices. In addition, *Easy Pay* provides the efficient payment functionality discussed above. No other internet portal can offer a connection with this functionality.

Services Available

Buyers and merchants have full access to all services provided at the ORMED X internet portal. For the buyer, these services include electronic sourcing, requisitioning, ordering, tendering, contracting, reconciliation, and payment to reduce high spend transaction costs and accounts payable work. For the merchant, these services include electronic catalog management, advertising, contracting, tendering, order handling, reconciliation, payment, and customer relationship management to reduce cost-of-sale and accounts receivable work.

Technology: Safety and Security

All information gathered and sent from ORMED X is dealt with using standard internet protocols and is completely transport protocol independent. The data is defined and ORMED X supports all known data transport protocols, such as XML, EDI, ANSI X12, Flat file, or any other file format that interfaces or full integration may require. Both real-time and batch formats are supported. All information is transferred within the standard secure socket layer HTTPS using Verisign certificates for cryptology, with either 128 or 1024 bit encryption keys (depending on the buyer's or merchant's requirements).

Multiple layers of hardware and software create an internet portal capable of sustaining 99 per cent uptime, with redundancy and backups at all levels possible. Weekly downtimes for maintenance and updates are always scheduled late at night and mostly on weekends. They are also posted on ORMED X and sent to each user of the ORMED MIS software through the software messaging system.

The entire site encompasses more than 20 tier 1 rack mounted servers, some of which are database and application servers with multiple processors. All are housed in a secure server room with climate and humidity control. The portal is serviced with an OPL3 full duplex fiber link to the internet. All servers, switches, and routers are powered through three (3) APC Symmetra Type 'B' Series, 3-Phase, UPS with battery packs capable of maintaining power for 12 hours of loss. All traffic is passed through a load balancing content switch. It is then sent to a message queue, then to one of the MS BizTalk Servers and application servers for processing. Finally, it is sent to the MS SQL Database for storage on the 100 gigabit SAN, with Raid 0 +1.

Recent upgrades to the ORMED X portal added load balancing and fail-over. The current portal is operating at approximately 2% of capacity where 100% capacity is 80% of server utilization.

There are three (3) separate identical computer environments maintained in the portal:

- 1st environment is for development;
- 2nd environment is for testing; and
- 3rd is the live environment.

The difference between these environments is the live environment involves multiple servers doing the same tasks, with load balancing and fail-over technology. The live environment also has live real-time incremental off-site backups for transactional data and data stored on the SAN. The development environment is backed up nightly, weekly and monthly and the test environment is not backed up. Both real-time and complete weekly backups are housed by Iron Mountain.

Conclusion

The new *Easy Pay* e-commerce process is empirically proven to reduce healthcare supply chain transaction costs by automating, integrating, and streamlining purchasing, accounts payable, and accounts receivable processes. By reducing, and, in some cases, eliminating, processes and costs, the buyer's accounts payable is automated, as is the merchant's accounts receivable. Over time, the resultant savings can be redirected into initiatives and investments that directly improve patient care and outcomes to secure a high quality healthcare system that is cost-efficient and time-effective.