



From the Editor

Return on investment (ROI) is never far from anyone's mind these days. Faced with tighter budgets, increased regulatory requirements, and a seemingly ever increasing user's wish list firms must fight the battle to do more with less—and do it right. The need to measure a project's potential and actual success has brought ROI front and center for Operations, IT, and Project Management personnel. In the Summer issue of the Venture NAVIGATOR we look at how ROI can be used to sell and manage projects. Providing useful insight into how to define, measure, and track ROI over the life of a project.

We also look at the challenges firms are facing with their aging legacy systems. The article presents an argument for commoditizing the various components of the legacy application in order to allow for an efficient and effective migration strategy to be applied.

As always, we look forward to your feedback and suggestions for future issues of Venture NAVIGATOR!

Where's My ROI?

The economic climate has helped to fuel an increased emphasis on return on investment (ROI). You need to be able to demonstrate to executive management that they will realize a return on their business and IT investments. Whether you are considering a new portfolio accounting, order management or performance and attribution system implementation, you need to be prepared to provide a compelling

business case that clearly illustrates the short- and long-term benefits that your firm will realize. Unless you have a way of measuring your results, you will not be able to recognize performance that is trending worse or whether your corrective actions are being effective.

In the most general terms, one can look at determining ROI from the two perspectives of cost savings

continued on page 2

Venture Proudly Sponsors The NICSA General Membership Meeting



Venture recently participated in the NICSA General Membership Meeting as a sponsor of the annual golf tournament. Joanne Cavallaro, left, and Vincent Manning greeted golfers as they approached the fifth tee.

Legacy Applications - Let the Migration Begin

As IT budgets begin to open up many firms are once again faced with the challenge of confronting aging legacy applications and systems. Legacy applications, the good ones, are akin to modern day classic rockers churning out the same hits from the 60s and 70s while offering up nothing new. The bad ones are ready for an IT

version of VH-1 "Where Are They Now" sagas. However, the good news is that there are options available to reengineer and/or replatform your firm's old rockers. By turning

continued on page 4

Contents

Where's My ROI?	1-4
Venture @ The NICSA General Membership Meeting	1
Legacy Applications—Let the Migration Begin	1, 4, 6-7
Hot Topics—Compliance and Regulatory Issues	5





Where's My ROI? (continued from page 1)

and increased revenue. Of the two, most often cost savings is considered more objective and revenue predictions is considered more subjective. Does this mean that cost savings is a more trusted number? Not necessarily.

For instance, let's take an example where a resource spends 2 hours per day manually collecting corporate actions data. A case is made to automate the collection of corporate actions from one of the many vendors on the market that provide corporate actions data feeds. The assumption is that one could calculate cost savings as being roughly 1/5 of a resource times the fully loaded cost of the resource (say \$100K) for an annual resource savings of \$20K. Subtracting out initial one-time feed setup costs and the annual vendor feed costs, one can quite easily project the cost savings. However, one would also need to evaluate the accuracy and timeliness of corporate actions feeds. Where inaccuracies may occur in the feeds or missing data to properly handle a corporate action, those same resources will now be required to spend time handling the issue. Conversely, one may have short-changed as to additional potential savings due to projected growth (within the next two years due to projected business growth, it will take a resource 4 hours per day to manually process corporate actions) or flexibility to introduce new products.

An alternative form of ROI that one may consider is IBM's "Real Options" approach. The approach recognizes that static methods of calculating ROI prior to investment and realizing returns involves an amount

of uncertainty. The IBM approach attempts to include uncertainty factors in weighing ROI. In the example above considering the automation of corporate actions from the expense savings perspective, one could look to break down corporate actions, for instance, by asset types. Within each of the asset types, attempt to determine and assign an error rate for corporate actions within the asset type. The idea is to then determine an ROI individually across each of the asset types as to the likeliness of inaccurate corporate actions occurring. With this information and understanding the holdings within each of the asset types, one can better predict an ROI. For instance, Rights and Warrants are not widely held within the firms' portfolios, but these experience a high rate of inaccuracies in automated corporate actions feeds. In this case the impact is lower to ROI than for a firm that tends to invest more heavily in Rights and Warrants. Further, one can push out particular components of an investment and later decide whether or not to invest based on information known at the future time. On a wider scale, this technique may allow one to decide in what areas to invest based on uncertainty. Per IBM, the Real Options approach to ROI provides a means to *"recognize the staged nature of many investments and account explicitly for the reality that certain of these investments will never be made if—based on additional information developed overtime—they are deemed unattractive."* Without getting into a detailed discussion of IBM's Real Options approach, this is an alternative one may consider.

Return on investment can be determined by measuring the impact that a technology solution provides to increase customer service, scalability, revenue increase, and cost reduction (such as head count).

One needs to look at Total Cost of Ownership, where costs include more than the design and development costs for the solution. Total cost of ownership includes the cost of developing the application, the infrastructure impact the application incurs, effect on networks, effect on data centers, production conversion costs, ongoing maintenance costs and the number of people required to provide application support subsequent to production implementation.

Another area to consider is the value provided which takes into account the expense reductions that will result from projects phasing out other applications and reducing inefficient workflows. In addition, examining value attempts to determine if the technology solution will result in cost avoidance. For example, cost increases related to scalability of current systems in addressing anticipated or projected volume increases or new regulatory requirements.

What factors are important in any Return on Investment exercise? Following are some critical factors.

Continued next page





Where's My ROI? (continued from previous page)

Benchmark. With some advanced preparation you can benchmark your existing operations and be ready to measure how your operations have changed after the implementation. Not only does an ROI analysis involve the cost of supporting current workloads and volumes, the analysis also needs to look at projected growth in workloads and volumes. If the cost to scale to meet growth is excessive, then any short-term ROI gains quickly disappear.

Set Concrete Expectations for Investments Before Approval. What are the specific items that you wish to measure? Operational productivity? Quality and accuracy of data? System throughput? Increase the number of accounts a manager can handle by varying percentages? Clearly articulate what you will be measuring and how you intend to measure.

Measure Softer Items. Make sure that you are not lacking hard data. The lack of specific numbers can result in a worthy project not getting approval and thus giving your competitors an advantage, for example a project to improve your Customer Satisfaction. Does the ROI analysis include measurement of flexibility to meet a variety of customer specific needs – such as customized client reporting?

Focus on Your Customers. Although it is natural to set targets for metrics that directly correlate to

your day-to-day operations, such as automating manual procedures, automating exceptions management, or reducing the frequency and impact of pricing errors, also target broader business revenue or profit goals.

Whether focusing on cost reduction, revenue opportunities, customer satisfaction, etc. – measurable criteria is the foundation to any ROI effort. Details matter.

Consider measuring how to reduce the time to produce performance and attribution reports as well as your reduced labor costs.

Below are two typical investment management applications to show how one might begin to assess the potential return on investment:

Portfolio Accounting System. Consider measuring cost of integration with both internal and external systems. Significant costs can result from integration efforts – particularly those that involve systems development and resulting QA activities. How supportive is the solution as to changes to workflow? Workflows that work well today may be altered to meet future needs. Rigid systems in regards to workflow can result in extensive costs where firms are required to consider new workflows. Accounting systems that are rules based often provide a means to meet a variety of business needs, while potentially shortening the path to supporting future processing requirements. Ability to provide exception management is critical to reducing costs.

Order Management System.

When evaluating ROI of OMS, one should consider projected revenue increases as well as potential cost reductions. Will the new OMS increase fund management's performance? If a fund manager could realize a 10 to 20 basis point improvement in investment performance, the result will directly impact the bottom line revenue.

Industry experts have been quoted as indicating that asset managers derive more return from market timing and asset allocation than from stock selection. An OMS that allows an investment firm to shorten the time between the availability of cash for investment, through to determining an appropriate investment, and on to completion of trade execution is a significant competitive advantage. The volatility in today's markets requires that firms react quicker to changing circumstances. The ability to model portfolios, generate orders and allocate resulting orders to brokers should be considered when determining ROI. Other areas of ROI include risk mitigation and compliance to changing regulations. Cost reductions may be realized such as the potential to reduce the number of trading desks required.

Continued next page





Where's My ROI? (continued from previous page)

Summary

In summary there are many ways in which to analyze ROI, and one must be careful to provide numbers that are realistic. General areas one can use as a starting point include:

- How many hours per week are expended in a particular workflow?
- How many hours may be saved each week in the workflow by modifying, reducing, or eliminating it?
- What is the average annual cost to the workflow?
- How many people in the organization will benefit from the new workflow?
- How much will a solution cost to implement?
- How much will the solution cost to run per month?
- What is the market availability for staffing in new technology?
- How fast can new requirements be implemented?

Whether focusing on cost reduction, revenue opportunities, customer satisfaction, etc. – measurable criteria is the foundation to any ROI effort. Details matter.

Legacy Applications - Let the Migration Begin

(Continued from page 1)

the functional components of the applications into commodities, newer technologies can be used to breathe new life into the aging applications and allow for a more manageable migration project.

Budget aside, chances are any remaining legacy applications are still around because of the fundamental role they play in the firm's operations. Be it an equity trade desk, portfolio accounting, or custody system, these types of applications are at the core of any firm's operations and have been built up over the years to handle every nuance and process needed to run the business. Herein lies one of the challenges faced with legacy applications. What functionality does the application currently provide and what is required to run the business now and in the future? The last thing you want to do is migrate an app just for the sake of adopting newer technology. From the time the legacy app was installed to the present, there is no doubt that work and data flows have been adapted based on functionality and technology available. Therefore, it

probably goes without saying that there is a better way to structure both work and data flows – operationally and technically.

Legacy Components as Commodities

There are options available to firms as to how to tackle their legacy applications. Aside from the lackluster, shortsighted 'if it's not broke, don't fix it' mentality, firms would be best served by a 'divide and conquer' strategy. While there is no denying the competitive opportunity technology can provide, firms would be best served by commoditizing the underlying pieces of the technology solutions. Dividing the legacy applications into three distinct areas – data, intelligence, and interfaces – will provide a framework for a migration strategy and allow the proper focus and tools to be applied most effectively. Commoditizing the underlying components of legacy applications presents an opportunity to quickly develop and deploy solutions as required. Sophisticated integration tools available from today's newer technologies

will allow for the adoption of industry standards and provide an opportunity to deploy solutions quicker and more efficiently.

Data

Legacy applications, due to their framework, lead to the proliferation of identical data sets, or worse: seemingly identical data that changes the farther from the source it travels. Retirement of multiple data stores through single data centers enables the promises of stricter data management to become a reality. The elimination of multiple data center silos allows for the creation of a central data management center in which all information flows into and throughout the organization. The speed at which information will flow is directly dependent on the ability of firms to create seamless data transfers.

Continued on page 6





Hot Topics—Compliance and Regulatory Issues

Hot Topics

4 p.m. Hard Close The SEC has proposed a 4 p.m. hard close on the trading of mutual funds as a means to combat late trading (See the Investment Company Act Rule 22c-1). The provision would prevent mutual fund investors from receiving the current day NAV if they purchase shares after 4 p.m. One of the major issues with this proposal is where the hard close is enforced: at the fund, the NSCC, or at the bank, broker/dealer, or intermediary. Both the ICI and SIA have commented in favor of this provision. The SIA specifically has commented on and recommended imposing a hard close at the intermediary level. This issue is not without controversy, as the SEC has received over 1,000 comment letters on this proposal. Some big players in the industry have raised various concerns over the proposed changes.

Mandatory Redemption Fees for Redeemable Fund Securities The SEC has proposed a 2% fee for mutual fund shares that are purchased and redeemed in a 5-business day period (new Rule 22c-2). The fees are intended to prevent market timing and to reimburse the fund for those investors who follow short-term trading strategies. Although this proposal also raises concerns for some, the SIA and ICI have both commented favorably on proposed redemption fee rules, and both organizations have separately recommended enhancements and improvements to the SEC.

Fee Breakpoints The SEC recently amended rule N1-A of the Securities Act of 1933 and the Investment Company Act of 1940 regarding enhanced prospectus disclosure of breakpoint discounts on front-end sales loads. Many investors are entitled to front-end sales load breakpoint discounts based on trading volumes. The NASD, NYSE and SEC discovered that many investors were not receiving the sales breakpoints they were entitled to, and created a task force to study the problem. The task force has since proposed enhancing prospectus and website disclosure of breakpoint information, including the qualifications necessary to receive breakpoints. The SIA commented favorably on the proposed changes, and the changes were recently finalized by the SEC and went into effect July 23, 2004.

Rule 12b-1 Amendments The SEC is proposing amendments to Rule 12b-1 that would prohibit mutual funds from paying for the distribution of their shares with brokerage commissions and prohibit funds from engaging in compensation arrangements with broker-dealers that sell the funds' shares. According to the SEC proposal (Securities and Exchange Commission 17 CFR Part 270 [Release No. IC-26356; File No. S7-09-04] RIN 3235-AJ07), the proposed amendments are designed to end a practice fraught with conflicts of interest which are harmful to funds and fund shareholders.

Securities Transaction Settlement The SEC has issued a concept release and is seeking comment on proposed rule changes intended to improve the efficiency of the U.S. clearing system and to assist in the move towards straight-through-processing. According to the release, (17 CFR PART 240 [RELEASE NO. 33-8398; 34-49405; IC-26384; FILE NO. S7-13-04] RIN 3235-AJ19) comment is being sought on whether the SEC should adopt a new rule, or the self-regulatory organizations should be required to enhance existing rules that require the completion of the confirmation and affirmation process on trade date ("T+0") when a broker-dealer provides delivery-versus-payment or receive-versus-payment privileges to a customer. Second, the SEC is seeking comment on the benefits and costs associated with implementing a settlement cycle for most broker-dealer transactions that is shorter than three days ("T+3"). Third, the Commission is seeking comment on reducing the use of physical securities.

The comment period ended June 16, 2004. The SIA is not in support of moving to a shortened settlement period, but is in favor of same day trade affirmation and confirmation. Comment was not available from the ICI at the time of this writing.





Legacy Applications - Let the Migration Begin

(Continued from page 4)

It is possible to implement a central data center while not yet eliminating all legacy applications by applying newer technologies to the solutions. Web services are beginning to live up to the hype despite ongoing discussions and disputes on true industry standards. XML offers the potential to commoditize data to an unprecedented level. The rules and processes required to implement XML force systems, both upstream and downstream, to properly define and deliver well-defined data elements. Through the analysis and message creation phase, firms can tighten data accuracy and delivery throughout the organization.

Intelligence

The business intelligence embedded in legacy applications probably represents the greatest hurdle to overcome in any migration strategy. If you can successfully overcome the data challenges, then addressing required intelligence, or functionality, should be an achievable goal. The proper transfer of business intelligence can only come from detailed functional requirements. To be successful will require detailed requirements capturing what is needed not just what is done. This process can be accomplished using a variety of methods including straight-ahead business analysis, user interviews, reverse engineering, and UML case studies. Chances are that in addition to more formal upgrades and enhancements, the applications have been tweaked overtime in a rushed fashion to accommodate specific client and/or business demands. However, those one-off changes have likely added to the growing

confusion over just what the app does and how it does it. Without the proper planning and time allocated to understanding functionality and requirements, any type of conversion will be doomed to fail.

Interfaces

Apart from the comfort of knowing the proper sequence of keystrokes, any upgrade to legacy front-end tools will benefit the end-user. If, to this point, the data and business

intelligence have been commoditized, then the development of new user interfaces should be relatively straightforward. By further taking advantage of XML and single data centers, web-based applications can be developed. Web services can allow for the back-end of systems to be decoupled from the front-end user interfaces. Through the use of web services, user-end applications can be developed in a more accelerated fashion without being constrained by underlying data and/or systematic challenges posed by legacy applications.

Migration to a web-based, e-commerce environment can be accomplished by applying Java and Java-based technology and principles (e.g., the J2EE Connector Architecture (J2EE CA)). With Java

standards in place, firms can access a common transaction-processing platform through any J2EE application. Java has been shown to work effectively in wrapping new technology and functionality around legacy systems as part of an overall migration plan. In addition, Java has been shown to breathe new life into servers such as IBM's AS/400 series. In recent benchmarking tests of Java performance on various servers, the AS/400 outperformed its rivals and showed its ability to offer extremely fast Java performance providing strong support for Java applications (www.javaworld.com).

Integration (the new STP)

Integration as an industry mantra picks up where straight-through-processing left off. In order for the technology promises and operational goals to be realized integration of the front-, middle-, and back-office must be realized. Those promises and goals include operating in a real-time environment with next to zero latency in the transfer of data and decision making. Legacy applications do not fit in those models. In addition to individual firm's goals, the added demands from the SEC and other regulatory bodies have, and will continue to, place a tremendous burden on firms. From a risk and compliance perspective, delays and/or gaps in data and decision making represent

Commoditizing the underlying components of legacy applications (data, intelligence, and interfaces) presents an opportunity to quickly develop and deploy solutions as required.

(Continued on page 7)





Legacy Applications - Let the Migration Begin

(Continued from previous page)

potentially disastrous financial and operational hurdles.

One area where the complexities associated with integrating legacy applications are being felt is with Unified Managed Accounts (UMAs). UMAs provide investors with a single account in which their investments are spread across multiple products that may include: separately managed accounts, mutual funds, exchange-traded funds, hedge funds, and annuities according to an investment plan. The challenge lies in the integration of disparate systems that undoubtedly include some legacy applications. As Timothy Williams, Senior Vice President and Product Manager for Smith Barney's consulting group, recently noted, "Unified managed accounts are a new concept in the industry. We've seen a lot of people talk about it, but few have gotten to a point of execution because it takes a lot of effort and mind power." Williams acknowledges that a major technology challenge is working with dozens of legacy systems that a firm has built up over the years for its various investment products. "It's about trying to get disparate systems to talk to each other," he

says, noting that Smith Barney had nearly 30 systems to tie together in order to get one holistic program in place. Technology has been a major stumbling block to the success of Unified Managed Accounts. "There are a lot of moving parts and a lot to tie together. Firms are faced with the challenge of legacy systems and programs, as well as integration." American Express is another example of a firm integrating its applications in order to deliver UMAs. The firm decided to put together several of its back-office systems to offer the new product.

"American Express has a commitment to component-based architecture," according to Director of Product Development Julia Newberry. "We're able to bring in new pieces of software and integrate them so that we're not stuck with legacy systems." Yet another example of how the functional commoditization of applications allows for the deployment of new technology and products eliminating the roadblocks legacy applications present [*Wall Street & Technology*, June 4, 2004].

Another area where the unification of data stores is demanded is on the compliance front. From a compliance standpoint, firm-wide risk manage-

Maximizing Data Management

Check out the next Venture NAVIGATOR for our look at the challenges and solutions surrounding data management. Featuring analysis and commentary by industry executives and leading service providers, we'll examine the current hurdles and opportunities to increase operational efficiencies in the management of market data. With individual firms spending tens of millions of dollars on market data and the increased demand for real-time information to meet growing investment and regulatory demands, the need for operational excellence has never been more critical.

ment will remain a cumbersome, manually intensive process so long as data silos and disparate applications remain in production. From AML to same-day-confirms and affirms, to pre-trade compliance, the list is growing on a seemingly non-stop pace as government and industry regulations continue to strain overburdened and outdated systems.

There is no easy answer as to how to deal with legacy applications. However, by breaking the applications down to core components and then moving to commoditize each, will allow for a faster transformation to improved technology platforms and operations.

Event Calendar

We will be exhibiting, sponsoring, and/or speaking at the following industry tradeshows. If you plan on attending any of these events and would like to schedule a meeting to learn more about Venture please contact us at 781.932.7544.

NICSA East Coast Regional Meeting	September 22, 2004	Boston, MA	www.nicsa.org
ICI 2004 Operations Conference and Service Provider Exhibition	November 7-10, 2004	Orlando, FL	www.ici.org

About VENTURE Financial Systems Group, LTD.

Venture Financial Systems Group, LTD. is a consulting firm specifically focused on delivering business and technology solutions to the investment industry. Venture offers a wide range of consulting services including strategic planning, software and vendor service evaluations, system integration, customized software solutions, and implementation services. For more information, visit: www.venturefsg.com.



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