

# Digging the TCO Trenches

*"Steady of heart and stout of hand"*

*Sir Walter Scott*

In October 2003, we asked CIOs what kind of Return on Investment (ROI) did they expect from replacing their servers. Fifty-eight percent said they expected greater than 26% Return on Investment (ROI). While many organizations would like this kind of payback and perform initial ROI calculations, on-going tracking and analysis is found to be difficult and challenging. Therefore, The Standish Group has created the VirtualADVISOR Investment Planning System.

is more accurate and, of course, more expensive. The "Average Cost" level of service relies solely upon the VirtualADVISOR Cost Assessment Model and underlying database. This was the level of analysis presented in our "Dollars to Cents: TCO in the Trenches 2002" research note, in which we compared average TCO for multiple vendors.

In this research note, we are presenting three TCO

The VirtualADVISOR system is a collection of services that help IT management plan investments. These **investment-planning services** include project, system, and product risk analysis; value analysis; return and yield analysis on projects and features; asset analysis; and total cost of ownership. The VirtualADVISOR system relies upon cost data from over 2,000 cases that is input directly by IT users – absolutely no vendor data is used.

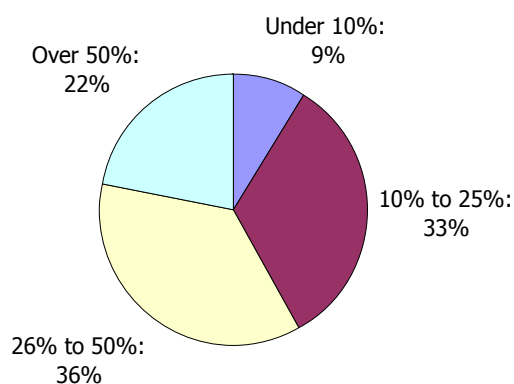
For calculating TCO for enterprise applications, we offer three levels of service: Average Cost, TCO Rough Order of Magnitude (TROM), and Profiling. Each level

Rough Order of Magnitude (TROM) case studies, which are based on actual engagements we were requested to perform during 2003. The TROM process is fairly straightforward, cost effective and fast compared to traditional TCO assessments. Traditional methods can cost hundreds of thousands of dollars and take several months.

Our "Fast Track" method has basically three steps:

1) kick-off meeting; 2) internal data collection; and 3) Standish normalization process. Step 1 is a one-day event with the core team. It requires one or two days of pre-work for both Standish and the client. Step 2, the client's staff collects cost and application data. It normal takes about fifty to one hundred hours per case.

## Expected ROI



*In general, what kind of Return on Investment (ROI) do you expect from replacing servers?*

The process is a far cry from the months of hard work using traditional methods. The third step is totally Standish. We take the data and map it against our Standish Unit of Work (SUW) to normalize the client's unique application characteristics. This enables us to measure the cost and performance against our standard. Using our database of over 2,000 normalized applications, we benchmark the costs and produce a custom report. The entire engagement can take as little as six weeks. Presented below are three TROM cases.

### Case 1: Integrated Billing Application

A European telephone company needed to integrate and consolidate their billing applications in order to produce a single statement for their customers. They enlisted The Standish Group to estimate their total cost of ownership for the operation of a new system to aggregate the billing data and produce monthly statements.

Our first step was to visit the client, view their operation and get an overview of their systems and applications. During this initial visit we saw that they had just about every system that had ever been built. Their multiple billing applications and databases were running on approximately ten different systems.

In our first cut we narrowed the field to their two primary vendors, HP and IBM. The major reason we selected these vendors was because their staff had expertise in the IBM Sysplex and HP NonStop platforms. This expertise would aid in the successful development of the new application. During this meeting we provided them with the necessary forms and detailed instructions on how to complete them with

the information needed to enable us to create a Standish Unit of Work (SUW) for the application.

Approximately two weeks later, and a hundred hours of work completed by the Telecom, we received their forms electronically. Our staff then took the forms and set out to go through the normalization process to create a custom SUW for the integrated billing application. We then applied that SUW to the VirtualADVISOR database and calculated a TCO for each proposed system.

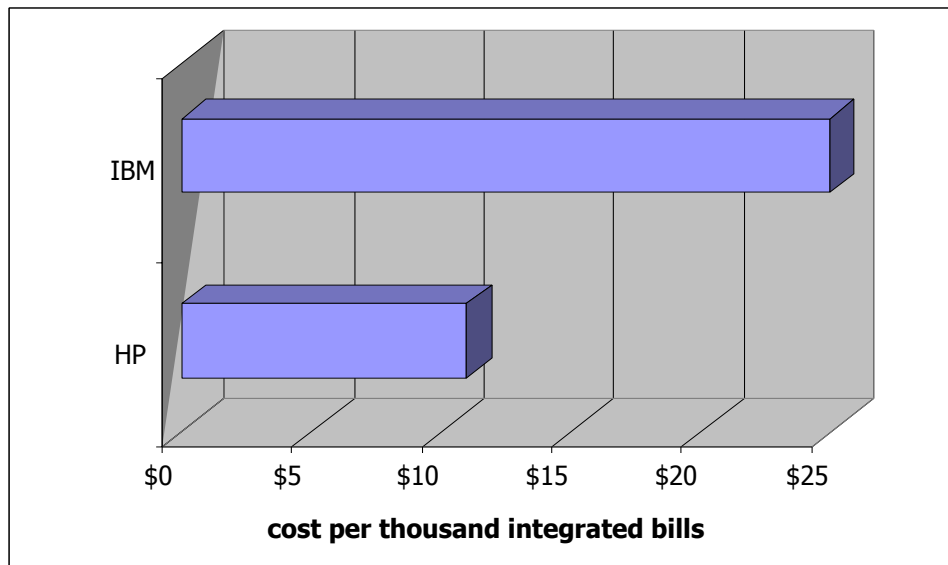
The integrated billing application runs at peak 3,000

hours per year at 3,690 bills per minute. Our two platforms are the HP NonStop server running NonStop SQL and Tuxedo, and IBM Sysplex running DB2 and CICS. Like many organizations, the cost for purchasing the hardware was the major factor in deciding which vendor to select. In this instance, the initial cost of

the two systems was 2,860,760 euros for IBM Sysplex and 3,251,006 euros for HP NonStop.

If you then add the application costs, which include such items as application maintenance and database licensing fees and apply a three-year lease rate, the numbers look dramatically different. In this method the NonStop is 2,448,000 euros and Sysplex is 4,800,000 euros.

Now, we need to add up all the other costs including manpower, maintenance, and facilities. The cost to run this application using an IBM Sysplex is 15,025,000 euros per year, which is the most expensive; while NonStop, the least expensive, operates at a total cost of 6,644,000 euros per year. The account went with the NonStop solution.



Comparison of HP and IBM: Cost of per thousand integrated bills

## Case 2: Ticket v. Back Office System

A large transportation company embarked on an aggressive expansion effort to attract more riders. They took a page from the airlines and created a flexible pricing method based on day, time of day, route and other loading variables. The application was quite sophisticated and required very skilled developers to create and implement the solution. They were successful in implementing the applications, however, they soon found that their ridership would not embrace the new pricing model, which resulted in fewer riders, not more. A management bloodbath followed this realization and the new management team was expected to get them back on “the right track.” Their initial task was to examine all old management decisions and reverse the ones that could affect a positive business result. The first thing they did was change the new ticketing system back to a standard ticket-pricing model. This brought the ridership back to the level prior to the new pricing system.

The second task was to cut costs. So they looked at all their

applications and found that two stood out; the ticket system, of course, and the back office system. The ticket system was considered mission-critical and availability was a key concern. If riders could not get a ticket, they would lose revenue and customers. They also expected volume to go through the roof requiring a system that had virtually unlimited scalability. Even though they were a big IBM Sysplex user, they chose to write this new ticket application on the HP NonStop platform for both scalability and availability. However, once the airline-type ticket pricing system was simplified (returned back to the standard ticket-pricing model) the system workload was cut by 50%. At peak with normal ridership, the ticket system was now only operating at 25% of its total capacity. The back office system was a standard package available on IBM mainframes and Unix; the company ran it on an IBM

## Sysplex.

The company went to the normal big consulting firms for an estimate to migrate both the ticket system off the HP NonStop and the back office off the IBM Sysplex, to a LINTEL platform. The bids came in for the ticket system at \$25 to \$50 million, while the back office system was \$10 to \$15 million.

The Standish Group was asked to perform a review of the cost and risk of both projects. Our VirtualADVISOR indicated that if they were to start from scratch, the annual cost to operate the NonStop was \$3.2M, while the cost of the LINTEL platform was \$2.2M. A million-

dollar difference in money, but it did not include the cost of downtime or the lack of scalability. Of course, it was not a green field situation. The NonStop servers were fairly new and paid for, so we needed to take that cost out of our equation. That being the case, the real cost to operate was \$1.9M. Therefore, they would need to spend \$25 to \$50 million AND pay an additional \$300,000 to operate a less scalable and reli-

able system. Some internal staff was pushing this and believed they could save a million dollars a year if they migrated. Even using their numbers, the pay back period would be at the very least, 25 years. We estimated the risk of failure at over 50%, using the VirtualADVISOR risk estimator.

The back office package, on the other hand, cost \$30 million per year to operate on the IBM Sysplex. Since the package already ran on a UNIX environment, they could run that same package in a LINUX environment for \$10 million per annum. The payback period would be a little over one year with a risk of failure at less than 25%. This is a \$20 million a year savings. Our recommendation was that migrating the ticket system was not sound financial management, but the back office system had great potential savings.

Year 1: ROI = -100%			
Capatalized Items	Cost Items	Savings Items	Revenue Items
NONE	Migration	NONE	NONE
Capitalized Total:	Costs Total:	Savings Total:	Revenue Total:
\$ 0.00	\$ 6,000,000.00	\$ 0.00	\$ 0.00
Year 2: ROI = -60%			
Capatalized Items	Cost Items	Savings Items	Revenue Items
NONE	Migration	New Linux System	NONE
Capitalized Total:	Costs Total:	Savings Total:	Revenue Total:
\$ 0.00	\$ 4,000,000.00	\$ 4,000,000.00	\$ 0.00
Year 3: ROI = 140%			
Capatalized Items	Cost Items	Savings Items	Revenue Items
NONE	Migration	New Linux System	NONE
Capitalized Total:	Costs Total:	Savings Total:	Revenue Total:
\$ 0.00	\$ 0.00	\$ 20,000,000.00	\$ 0.00
Final ROI: 140%		Payback Period (Years): 2.3	

A VirtualADVISOR ROI report for the back office system with a migration of 20 months

### Case 3: ATM and POS Network

In order to meet customer demands for new services, a United States bank needed to update their Automatic Teller Machine (ATM) and Point Of Sale (POS) network. They engaged The Standish Group to estimate their total cost of ownership to acquire and operate a new system. Here again, our first step was to visit the client and view their operation and get an overview of their system and applications. The current network is running on an IBM mainframe, using TPF (Transaction Processing Facility) software. The client was considering three

alternate systems and two operating modes; batch and online. The client narrowed the field to three platforms and five operating environments: HP NonStop, IBM mainframes and Sun Clusters. The client specified that HP would run either online alone or online plus batch. The IBM mainframe would run only batch or batch plus online. The Sun Cluster would run both batch and online, or neither. As part of the standard engagement we gave them the forms and detailed instructions on how to fill out the information we would need to allow us to create a Standish Unit of Work (SUW) for these applications.

It took them about four weeks and a hundred and fifty staff hours of work to complete their tasks. Once we received the forms electronically, our staff took them and set out to go through the normalization process. As

usual, we made several clarifying telephone calls and e-mails and after another two-weeks of work had a SUW for the ATM and POS applications. We then applied that SUW to the VirtualADVISOR database and calculated a TCO for each proposed system and operating mode. We also provided a risk and cost to migrate estimates as well as calculated a Return on Investment (ROI).

<i>Dual HP NonStop CPA* Servers running Online and Batch</i>	<i>\$3,557,622</i>
<i>Dual Online NED Servers and single IBM Batch</i>	<i>\$5,245,734</i>
<i>IBM Sysplex running CPA Online &amp; Batch</i>	<i>\$5,180,332</i>
<i>Dual Sun Cluster Online and Batch</i>	<i>\$4,667,479</i>

*Yearly costs of the four different options*

We used our project database to estimate the migration cost at \$4 million. The current system had a TCO of \$5.8 million per year to operate; so all the choices would save them money. Using the ROI tool, the

NonStop System showed a payback period of 1.8 years with a three-year ROI of 57%. The second had a five-year payback with a 25% ROI in the fifth year. Both the straight IBM and the NonStop and IBM combination had a payback period of more than ten years with no ROI in the ten-year period.

In summary, TROMs can provide a fast and accurate way in assessing total cost of ownership, risk and value for projects and technology. The VirtualADVISOR Solutions can help your organization make better decisions based upon real world TCO data.

\* CPA stands for Continuous Processing Architecture. It is an availability method that combines the attributes of high availability with disaster recovery to improve overall availability while reducing expense. For more information refer to our website.



The Standish Group International, Inc provides IT investment-planning services based on extensive primary case-based research and proprietary wisdom software solutions. These services include asset and project profile management, Total Cost of Ownership (TCO) management, risk management, cost estimating, return of investment (ROI) services and value assessments.