



Enterprise Customer Solution  
Microsoft Rapid Economic Justification (REJ) Case Study



Lighthouse International

## Lighthouse Realizes Its Vision to Revolutionize Patient Treatment and Case Management

### Overview

#### Country or Region

United States

#### Industry

Nonprofit

#### Customer Profile

Since 1905, Lighthouse International (LHI) has been the worldwide leader in helping people who are blind and partially sighted remain active, independent, and productive.

#### Business Situation

Manual processes for client admissions, scheduling, assessment, billing, and insurance reimbursement were costing LHI time for client care and money in medical reimbursements.

#### Solution

LHI replaced its aging system with a custom-built medical information and management application operating on Microsoft® Windows Server™ 2003 and Microsoft SQL Server™ 2000, and built on the Microsoft .NET Framework.

#### Benefits

- Standardized quantitative client admissions and assessment processes
- Reduced medical reimbursement costs
- A streamlined scheduling process, which enables care providers to spend more time with clients

*“The EVRR system enables LHI to do what we do best: help people who are visually impaired become more empowered and live full lives.”*

—Dr. Betty Bird, Senior Vice President for Rehabilitation, Lighthouse International

*“That we accomplished our goals quickly, easily, and cost effectively is a testament to working seamlessly with Microsoft in a great team effort.”*

—Patrick Benson, Chief Information Officer, Lighthouse International

Lighthouse International (LHI), a global leader in providing care to people who are visually impaired, needed to replace manual, qualitative business processes with quantitative client assessment and evaluation methods.

LHI contracted Microsoft® Services to help develop an integrated case management and data integration application built on the Microsoft .NET Framework, using Microsoft Windows Server™ 2003 and Microsoft SQL Server™ 2000. Through its new Electronic Vision Rehabilitation Record solution, LHI:

- Reduced client processing and assessment time by more than 50 percent and 65 percent, respectively.
- Increased insurance reimbursements by 5 percent.
- Reduced insurance claims processing costs from 50 to 6 percent of each reimbursable dollar.

A business value analysis using Microsoft Rapid Economic Justification framework identified that LHI can achieve a 106 percent internal rate of return on its investment within 12 months.

“...[W]e needed to revolutionize our administrative, management, and treatment processes, so we could operate more efficiently.”

—Dr. Betty Bird, Senior Vice President for Rehabilitation, Lighthouse International

## REJ Process

### Rapid Economic Justification

Microsoft Rapid Economic Justification is a business value methodology that enables IT managers to define the economic value of IT initiatives. For information about REJ, visit: [www.microsoft.com/value](http://www.microsoft.com/value)

### Cost-Benefit Analysis

- **Costs:** U.S.\$1.4 million in technology and personnel over a three-year period for implementation and ongoing costs.
- **Benefits:** U.S.\$3.9 million over three years, not including licensing revenue from resale of EVRR.

### Financial Analysis

- Internal rate of return: 106 percent
- Payback period: 12 months

## Situation

As the preeminent nonprofit organization in the world that helps people with impaired vision remain active, independent, and productive, Lighthouse International (LHI) has a singular vision: spend more time with and provide better care for its clients so that they can lead healthy, fruitful lives.

Achieving this vision was compromised by an aging IT infrastructure that impeded billing and insurance reimbursements. The organization was also hampered by ad hoc, manual processes of client admissions, assessment, scheduling, and rehabilitation treatment.

Dr. Betty Bird, Senior Vice President for Rehabilitation at Lighthouse International, put it succinctly when she said, “We revolutionized society in 1905 when Lighthouse was established. More recently, we needed to revolutionize our administrative, management, and treatment processes, so we could operate more efficiently. Our requirements included making better use of our human and financial resources and better service to our clients.”

LHI’s operational challenges lay in two principal areas: its legacy IT infrastructure and manual business processes.

**Legacy IT infrastructure.** LHI’s IT infrastructure was based on an aging VAX/VMS-based platform that required expensive maintenance. The infrastructure also included the LHI Consumer Information System (CIS), a stand-alone application that didn’t integrate with client

admissions, billing, and Medicaid or Medicare insurance reimbursement systems, or provide support for critical records such as scheduling, treatment, or evaluation.

AdvantX, a specialized business-critical line of business (LOB) application that processed and tracked Medicare and Medicaid reimbursements, was acquired to reduce manual administrative effort. However, the application failed to integrate reimbursement data with the LHI CIS, client treatment, or back-office administrative processes.

**LHI business processes.** Non-standard, qualitative, manual business processes were used in routine activities such as client admissions and assessment, billing, insurance reimbursement, scheduling, and client evaluation and treatment for the more than 3,000 new clients treated in LHI rehabilitation programs each year.

As a nonprofit institution, LHI relies on funding from private donations, foundations, government support, and insurance reimbursements. Processing claims consumed 50 percent of every dollar reimbursed by Medicare, Medicaid, or private insurance companies. Furthermore, mandated compliance with federal legislation such as the Health Insurance Portability and Accountability Act (HIPAA) created additional administrative and legal pressures.

In addition, even though vision rehabilitation is a very hands-on, one-on-one process between the healthcare provider and client, the process for client admissions and

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*—Dr. Betty Bird, Senior Vice President for Rehabilitation, Lighthouse International*

assessment, treatment scheduling, and treatment evaluation was a manual and subjective process. This meant that often these tasks were performed by highly skilled workers; social workers admitted clients, or doctors performed clerical tasks such as treatment scheduling.

Dr. Bird explains, “To become more operationally efficient, the best place to start was using modern information technologies as an electronic backbone and integrating our core administrative and management processes.”

Exhibit 1, a Business Assessment Roadmap, summarizes the relationships between LHI business goals, IT strategies, and opportunities to improve its business processes.

LHI determined that a mission-critical line of business application must:

- **Improve client services, level of treatment, and client success** by using software to convert non-standard, qualitative, administrative and assessment processes into

Stakeholder	Critical Success Factors	Key Performance Indicators	Strategy	Process or Activity	Opportunity to Improve
Vice President for Program Evaluation	Provide appropriate level of service to clients	Number of clients overtreated	Reduce overtreatment	Assessment and treatment data collection	Establish warnings to provider in EVRR during treatment
	Increase provider capacity to treat clients	Success rate of clients achieving care objectives	Reduce number of unsuccessful treatments	Establish standard assessment and treatment methodology	Implement scoring and treatment methodology
		Service hours spent with client	Enable administrative assistants to conduct admissions instead of social workers	Establish client admissions methodology	Automate adaptive assessments within EVRR and scheduling
Sr. Vice President for Rehabilitation Programs and Services	Increase provider capacity	Service hours spent with client	Reduce provider scheduling time	Eliminate time spent scheduling next week's appointments	Automate provider scheduling in EVRR
	Medicare/Medicaid reimbursements and insurance	Reimbursable revenue	Simplify reimbursements	Capture correct diagnostic codes	Create an HL7 file from EVRR and outsource reimbursement function
	Reimbursement from New York State CBVH	Reimbursable revenue	Simplify reconciliation process	Redesign reconciliation process	Eliminate manual paper exchange and rekeying between NYS and Lighthouse through EVRR
Chief Information Officer	IT operational efficiency	Expense budget	Eliminate duplicate or unnecessary IT systems	Replace legacy IT systems	Retire existing CIS system; replace with EVRR

**Exhibit 1: Concise Business Assessment Roadmap for Lighthouse International**

“The LHI Electronic Vision Rehabilitation Record is an electronic medical recordkeeping system that codifies best practices in triage, assessments, vision rehabilitation processes, and reporting.”

—Patrick Benson, Chief Information Officer, Lighthouse International

standardized, quantitative processes. This approach requires less manual labor and enables an individual with lower-level professional skills to admit clients in a more accurate and repeatable manner. Standardized processes shorten the lifecycle of client admissions, assessment, scheduling, and evaluation and give care providers more time to treat clients.

- **Improve management and administration** by integrating front-office client admissions and assessment information with back-office medical billing and reimbursement activities, client-centric treatment scheduling, and evaluation. This approach results in a systematic and efficient process for management and reporting that helps increase the time treatment providers spend with clients.
- **Improve IT operational efficiency** by replacing legacy IT systems. This approach reduces total IT operational costs by improving the stability and reliability of LHI’s mission-critical computing platform, which provides the infrastructure for client treatment, administration, and case management.

## Solution

LHI’s challenge was twofold: choose a platform to replace the VAX/VMS platform and select a line of business application that would integrate reimbursement data without AdvantX (which was scheduled for retirement) and work with the Microsoft® Windows® XP operating system–based

client PCs used for administrative purposes. As a leader in its field, LHI was aware that:

- Line of business applications that combined all the mission-critical administrative, management, and client-centric functionality they required did not exist.
- As many as 300 similar but smaller nonprofit vision rehabilitation centers in the United States and larger national organizations in Canada, the United Kingdom, Australia, and other countries dealt with the same operational efficiency challenges.

True to its legacy for innovation, LHI managers decided that it would be the market leader and create a customized application that it could use and license to its sister organizations.

Working with consultants from the New York City office of Microsoft Services and its Microsoft Enterprise Strategy Consultant (ESC), LHI developed a functional specification for its new line of business application, Electronic Vision Rehabilitation Record (EVRR).

Patrick Benson, Chief Information Officer for Lighthouse International explains, “The LHI Electronic Vision Rehabilitation Record is an electronic medical recordkeeping system that codifies best practices in triage, assessments, vision rehabilitation processes, and reporting.”

## Application Development Technology

- XML-based Web services
- Microsoft® .NET Framework
- Microsoft ASP.NET
- Microsoft Visual Studio® .NET 2003

## Database Management Technology

- Microsoft SQL Server™ 2000
- Microsoft Windows Server™ 2003

## Integration Technology

- Microsoft BizTalk® Server 2004
- Microsoft Virtual Server 2005

## Customer IT Environment

- **Number of Users:** 350 staff
- **Number of PCs:** 350
- **Desktop Operating System:** Microsoft Windows® XP Professional, Office XP
- **Centralized Infrastructure:** Yes
- **Data Center:** Yes

*“EVRR capabilities can be used by partially sighted, blind, and fully sighted professionals, who will use the system while delivering services at the Lighthouse center or at remote locations.”*

*—Joe Laurenzano, Director of Operations, Lighthouse International*

Benson continues, “EVRR is sufficiently flexible to adopt best practices and standards. It enables treatment scheduling and data collection for ongoing analysis and fine tuning of services, plus it supports online and offline usage billing operations.”

The Microsoft ESC who worked with LHI played a pivotal role in moving the project from the envisioning stage through development and integration with LHI’s infrastructure. He also helped drive the business value analysis of EVRR so that LHI’s business and IT leadership would be assured of its economic value.

From an enterprise strategy standpoint, EVRR is the first step in the creation of a complete systems portfolio for LHI that supports LHI’s organizational goals. The EVRR application supports LHI’s focus on the client and its mission to serve clients in the most proficient and efficient manner possible by:

- **Enhancing the quality of information and degree of collaboration** among vision rehabilitation agencies by using common tools and information to deliver services consistently across agencies.
- **Delivering integrated applications more rapidly** to meet ever-changing agency needs, reduce costs, and improve efficiencies.
- **Establishing a standard architecture framework** that supports the creation and reuse of program modules and technology components to develop and deliver solutions.

LHI executives decided to build EVRR on a Microsoft environment that included the Microsoft Windows Server™ 2003 operating system and Microsoft SQL Server™ 2000 database. The system was created with the Microsoft Visual Studio® .NET 2003 development system and built on the Microsoft .NET Framework. All of these applications and technologies work seamlessly with LHI’s current desktop personal computing environment, which consists of the Microsoft Windows XP operating system and Microsoft Office XP personal productivity application.

Microsoft BizTalk® Server 2004 provides transaction interface functionality, which translates all transactions to the appropriate accounting systems and data stores and between different EVRR operational systems. BizTalk also enables HIPAA compliance by providing functionality for both inbound and outbound transaction sets and by helping LHI to meet the Act’s privacy requirements of client files.

Because LHI’s core competency is in vision rehabilitation and not software application development, LHI enlisted the assistance of Microsoft Services to choose and manage Satyam Computer Services (an overseas software developer and Microsoft partner) to build and test EVRR and then install it in the LHI computing infrastructure.

Joe Laurenzano, Director of Operations for LHI notes, “EVRR capabilities can be used by partially sighted, blind, and fully sighted professionals, who will use the system while delivering services at the Lighthouse center or at remote locations.”

*“Using data types to indicate the type and state of treatment ensures that the right service is provided at the right time and helps treatment providers spend more time with the client.”*

—Patrick Benson, Chief Information Officer, Lighthouse International

Laurenzano continues, “LHI users with vision impairments use EVRR through standard tools such as the JAWS screen reader<sup>1</sup> and the ZoomText screen magnification software tool. EVRR also complies with the Microsoft Active Accessibility standard.”<sup>2</sup>

EVRR is also accessible through hardware devices used by visually impaired Lighthouse staff members. These devices include a refreshable Braille display device or note-taking devices such as BrailleNote or

PackMate.

The EVRR application is available for license from LHI for approved vision rehabilitation centers worldwide.<sup>3</sup>

### Benefits

LHI implemented the first version of EVRR in 2005. As part of the engagement with Microsoft Services, a business value analysis was conducted using the Microsoft Rapid Economic Justification (REJ)

	Value Creation - IT		Value Creation - Business		Total U.S.\$ (3 years)
	IT Operations	Application Development	Function	Process in Value Chain	
Increase Revenue			Eliminated four hours of scheduling time per provider per week for 50 providers.	For annual 100,000 service hours, reduced over-treatment from 10% to 5%, which resulted in additional provider capacity to treat new clients.	\$1,732,500
Protect Revenue				For annual 100,000 service hours, reduced unsuccessful treatment rate from 20% to 15%.	\$562,500
Reduce Costs	Eliminated system downtime by replacing aging VAX platform with modern IT infrastructure.	Eliminated maintenance costs for legacy Medicare application.		Reduced cost and time of patient problem identification by using template-based admissions form completed by an administrative assistant rather than a professional. This reduced time for admissions by 76% from 1.75 hours (105 minutes) to 25 minutes.	\$815,594
			Reduced 3.75 FTEs by eliminating manual paper exchange and data entry rework.	Reduced cost of processing insurance reimbursement from 50% to 6% of each \$1.00 of claim by process integration and automation. This eliminated 3.5 clerk FTEs and one accounting manager FTE.	\$768,750

**Exhibit 2: Benefits Matrix for Lighthouse International**

<sup>1</sup> For information about JAWS screen reader tools, go to: [www.freedomscientific.com/fsproducts/softwarejaws.asp](http://www.freedomscientific.com/fsproducts/softwarejaws.asp)

<sup>2</sup> For information on Microsoft Active Accessibility, go to: <http://msdn.microsoft.com/library/default.asp?url=/library/en-us/vsent7/html/vxconActiveAccessibility.asp>

framework to assess the costs and tangible economic benefits that LHI realized.

<sup>3</sup> For more information about the Lighthouse EVRR solution, go to: <http://www.evrr.com>

*“More objective and quantifiable EVRR assessment criteria help LHI care providers make more precise assessments, which translates into more precision in determining a treatment plan for each client.”*

*—Tana D'allura, Vice President for Program Evaluation, Lighthouse International*

Exhibit 2 summarizes the economic benefits that LHI achieved by implementing EVRR. LHI achieved four types of benefits, which included:

- Improved clinical and business best practices
- Better data collection, integration, and access
- Enhanced client services and satisfaction
- Increased revenue

#### Improved Clinical and Business Best Practices

Previously, client admissions, assessment, treatment, and treatment evaluation processes were unstructured, mostly subjective, and difficult to quantify. As a result, they often did not meet clear protocols for treatment or result in as high a percentage of effective treatments as LHI desired and their clients needed.

Another issue was that newer admissions associates with limited practical experience would assess a new client's type and level of treatment inaccurately. As a result, it was sometimes difficult to judge whether an assessment was accurate until several steps into the treatment process.

For example, clients who entered treatment at Level 3 might require 10 treatment sessions compared to a client at Level 1, who might require 4 sessions.

As a result, subjective initial assessments and treatment evaluations sometimes

resulted in more treatment than was needed to meet the minimum level of client self-sufficiency.

Admissions tasks were often performed by a social worker, whose professional skills were not needed for tasks that could be accomplished by a less skilled worker.

Joe Laurenzano comments, “The standardized EVRR methodology replaces subjective assessment with a tightly structured and highly quantifiable process that can be handled by a clerk with a lower but reasonable skill level.”

Patrick Benson adds, “The new EVRR process employs a centralized case management database that tracks the history of clients from their entry into the LHI system to their graduation, when they complete treatment. EVRR also includes dedicated online scheduling, triage, and automated billing.”

Use of EVRR has resulted in many benefits, which include:

- **Faster client admissions.** Admissions tasks now take only 25 minutes compared to 60 minutes required when using the old CIS system.
- **Less triage and registration time.** Triage and registration time has been reduced from 2 hours to 30 minutes. Writing progress reports has been reduced from 30 minutes to 10 minutes per report.

*“The standardized EVRR methodology replaces subjective assessment with a tightly structured and highly quantifiable process that can be handled by a clerk with a lower but reasonable skill level.”*

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- **Lower initial assessment costs.** Use of less skilled and lower-cost staff members to conduct assessments has reduced assessment time from 90 minutes to 30 minutes per client and no longer requires a social worker. This change saves LHI approximately U.S.\$500,000 annually.
- **Lower staffing costs.** Simpler and faster admissions now requires 3.5 fewer full-time employees(FTE), which has reduced the LHI annual budget by about U.S.\$425,000.
- **Treatment providers regain 13 percent of each work week previously lost to scheduling tasks.** Assigning scheduling tasks to less costly workers eliminated four hours of every Friday afternoon that 50 treatment providers previously dedicated to client scheduling and catching up on paperwork. LHI can reassign these highly paid professionals to treat more clients. The time regained is valued at approximately U.S.\$1.17 million in billable and potentially reimbursable time.
- **Metrics help to assert national standards and accreditation.** Using quantitative methods to track the number of clients, their treatment, and their level of function at graduation helps LHI define and assert national standards that its sister vision rehabilitation centers can strive to achieve. These methods also set a

standard for accrediting vision treatment centers.

- **Quantitative reports help increase reimbursement approvals.** Metrics present a complete and accurate view of clients who go through or conclude LHI treatment. Thanks to this more complete information, LHI can now provide an accurate statistical reference to the government and private insurance carriers that reimburse LHI for services.

#### **Better Data Collection, Integration, and Access**

LHI's previous data-entry methods lacked a centralized database and did not integrate all of the metrics and case notes that increased during the course of client treatment.

For example, data entry for insurance billing or reimbursement was not part of client admission procedures. Clients could not be tracked throughout their treatment. When LHI sought reimbursement, data from the CIS system was printed out, rekeyed in the Microsoft Office Excel® 2003 spreadsheet software, and sent to the New York State Commission for the Blind and Visually Handicapped and other insurance providers.

Further, data that was collected was often incomplete or inaccurate, in part because of inefficient data collection systems. This was also because 21 of the LHI's 350 employees are visually impaired and could not access the legacy administration and case management system effectively.

*“LHI is all about empowering people with impaired vision. EVRR helps us accomplish this by tracking data that enables us to match treatment modalities with the specific needs of our clients.”*

*—Dr. Betty Bird, Senior Vice President for Rehabilitation, Lighthouse International*

Specific data handling benefits of the new EVRR system include:

- **Integrated and accurate data from admission through graduation.** Using EVRR, LHI now has a system that is accessible and used by all of its employees, including those who are visually impaired. Data, which is organized by user profiles, is now integrated into a single database that is available throughout the organization.
- **Staffing costs avoided.** Eliminating manual paper exchange and data re-entry work has enabled LHI to eliminate 4 FTE of clerical staff and save an annual U.S.\$340,000 from salaries, benefits, and overhead costs.
- **Data entry during treatment.** Rather than have different providers write case notes that may or may not have been inserted into the client case file, notes from all client interactions and treatments are now entered into EVRR and stored in a centralized database. (EVRR scales to 500 users per organization and 200 concurrent users.)

Patrick Benson notes, “Using data types to indicate the type and state of treatment ensures that the right service is provided at the right time and helps treatment providers spend more time with the client.”

- **Data continuity and integrity support HIPAA compliance.** Having all client treatment and billing information in a centralized database ensures the

privacy and protection necessary to comply with HIPAA. Access to centralized data stores also helps internal and external auditing processes.

### Enhanced Client Services and Satisfaction

The most vital part of the LHI treatment process is that clients obtain appropriate treatment, so they can progress through their treatment as quickly and efficiently as possible.

Dr. Bird notes, “LHI is all about empowering people with impaired vision. EVRR helps us accomplish this by tracking data that enables us to match treatment modalities with the specific needs of our clients.”

- **More success matching client needs and treatment.** Moving from a subjective and qualitative admissions and assessment process to one based on clearly defined standards that can be quantified has enabled the LHI staff to assess client needs more effectively and match the types and number of treatment sessions more closely.

As a result, de facto standards replaced subjective assessment. Admissions associates are more accurate, care providers are more specific and intentional about their treatment, and client needs are assessed more accurately—all of which result in more effective and timely treatment.

*“We anticipate sufficient revenue to recoup our development costs and finance continued development. In the future, EVRR could potentially become a profit center for LHI.”*

—Patrick Benson, Chief Information Officer, Lighthouse International

- **Greater professional effectiveness with less overtreatment.** One particular dilemma faced by treatment providers was not having accurate assessment information on each client’s level of function. This often resulted in clients getting more treatment than they needed to reach a specific functional level.

For example, in the old system, a client might start treatment with an assessment of 0 percent function when he or she might actually possess 30 percent function. As a result, he or she might start treatment at a level inappropriate to his or her abilities.

Tana D'allura, Vice President for Program Evaluation at LHI notes, “More objective and quantifiable EVRR assessment criteria help LHI care providers make more precise assessments, which translates into more precision in determining a treatment plan for each client.”

As a result, for the 100,000 service hours provided to its clients annually, LHI has reduced overtreatment hours from 10 percent to 5 percent. Reducing overtreatment enables care providers to increase their case loads. It also enables clients to graduate from their treatment more quickly. The economic value of this benefit is approximately U.S.\$560,000 annually.

- **Shift from location-based to mobile treatment.** LHI had operated several remote facilities in the outer boroughs

of New York City and in upstate New York. Apart from the financial costs of operating these facilities, there were significant data collection and integration issues and HIPAA compliance challenges. In the past, remote facilities also made it difficult for LHI clients who are visually impaired to travel to these facilities.

Now, using EVRR, LHI has been able to close these remote facilities and use social workers and treatment providers equipped with laptop personal computers to travel directly to their clients. All data is collected with the same electronic forms used at the LHI office in Manhattan. After LHI workers leave their clients, data can be downloaded to EVRR remotely or when they return to LHI and access the organization’s network.

#### Increased Revenue

As a nonprofit institution, LHI operates on donations, foundation and government funds, as well as reimbursement from private insurance, Medicare, and Medicaid. Revenue benefits derived from the EVRR system include:

- **Value of medical reimbursements increased by 5 percent.** New York State reimburses only successful treatment. Because it is challenging to define successful treatment, LHI was not reimbursed for all the hours they submitted. As a result, of the 100,000 service hours LHI submitted to New York State each year, fees for approximately 20,000 hours were not reimbursed.

“...[G]oing into the EVRR project, we are in the enviable position of having our costs covered and a willing and receptive market for our EVRR product.”

—Dr. Betty Bird, Senior Vice President for Rehabilitation, Lighthouse International

Now, using EVRR, there are clearly defined criteria for varying levels of client function. Successful treatment is defined differently for different clients; it is based on the needs and level of function they have when they enter treatment.

By using EVRR, LHI has reduced unsuccessful treatments from 20 percent to 15 percent of annual service hours, a 25-percent improvement.

The extra reimbursable funds have provided more operating income to LHI. Because of clearly defined success criteria, the State of New York and federal funding agencies are more confident that their money is being used effectively.

- **Reimbursement processing costs reduced from 50 percent to 6 percent.** Because the old AdvantX system was not connected to any information at LHI, when it came time to complete Medicaid or Medicare forms, information was incomplete and had to be accessed and rekeyed manually. As a result, the cost of completing a LHI claim could equal up to 50 percent of the claim's value.

Now, by using EVRR, all information resides in a centralized database, and the claims documents are converted into electronic forms. LHI reduced the cost of claims processing to only 6 percent of total reimbursements, a benefit valued at approximately U.S.\$214,000 a year. This benefit reflects a reduction in clerical

FTEs and a one-time charge in retiring the AdvantX system.

- **New revenue from licensing EVRR to sister institutions.** With more than 300 local and regional institutions in the United States and many national institutions in other countries providing vision rehabilitation, LHI is well positioned to take a leadership role and share EVRR by licensing it to other institutions.

Patrick Benson explains, “We anticipate sufficient revenue to recoup our development costs and finance continued development. In the future, EVRR could potentially become a profit center for LHI.”

#### Costs

As a nonprofit organization, LHI had several financial advantages over its for-profit counterparts when it came to financing the development of EVRR.

Although the overall development costs were approximately U.S.\$2.5 million, LHI's strategy of developing an application that could be used throughout its industry was sufficiently compelling that it was able to obtain roughly U.S.\$2 million in financing through government grants. Several smaller and equally progressive United States-based vision rehabilitation centers took advantage of their government funding and contributed the balance of the funds required to field test EVRR.

Dr. Bird notes, “Equally as important as sourcing funds from government agencies in

*“Microsoft played a pivotal role in making EVRR a reality.... Everyone we worked with knew what was necessary to help us fulfill our vision of making EVRR a global standard for case management....”*

*—Patrick Benson, Chief Information Officer, Lighthouse International*

the United States was that leading national vision rehabilitation institutions in Canada, the United Kingdom, Australia, and New Zealand have shown great interest in licensing EVRR upon its completion. As a result, going into the EVRR project, we are in the enviable position of having our costs covered and a willing and receptive market for our EVRR product.”

**Return on Investment**

Assessing the business value of the new EVRR system was part of the Microsoft Services engagement. The economic analysis based on the REJ framework examined how value was created for LHI and identified that reducing or avoiding costs were the primary contributors to the project’s value.

Even though LHI is a nonprofit organization, it is still accountable to its funding sources on the appropriate use of funds. The REJ analysis identified that LHI was able to achieve a 106-percent internal

rate of return (IRR) on its investment within a 12-month period.

Exhibit 3 shows the cash flow expected by LHI for EVRR over a three-year period.

**Microsoft Differentiation**

Patrick Benson noted key points about working with Microsoft when he said, “Microsoft played a pivotal role in making EVRR a reality. From initial design of the functional specification to a world-class development platform, superb server-based applications, and professional services—all phases and parts of the project—it was an impressive experience. Everyone we worked with knew what was necessary to help us fulfill our vision of making EVRR a global standard for case management used by treatment providers.”

**Conclusion**

Dr. Bird comments, “The EVRR system enables LHI to do what we do best: help people with vision impairments become more empowered and live full lives.”

Patrick Benson concludes, saying, “That we accomplished our goals quickly, easily, and cost-effectively is a testament to working seamlessly with Microsoft in a great team effort.”

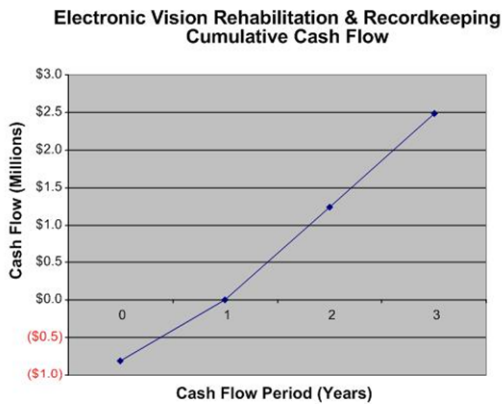


Exhibit 3: Break-even Point of EVRR Deployment

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## Software and Services

- Microsoft Windows Server System™
  - Microsoft Windows Server 2003 Standard Edition
  - Microsoft SQL Server 2000
  - Microsoft BizTalk Server 2004
  - Microsoft Virtual Server 2005
  - Internet Information Services version 6.0
- Microsoft Windows XP with Service Pack 2
- Microsoft Visual Studio .NET 2003
- **Services**
  - Microsoft Development Network (MSDN®)
  - Microsoft Services
- **Technologies**
  - Microsoft Active Directory®
  - Microsoft .NET Framework version 1.1
  - Extensible Markup Language (XML)
  - Microsoft ASP.NET

## Partners

- Satyam Computer Services
- Microsoft Services

## Solution Components

**Microsoft Windows Server 2003** delivers a highly productive platform for powering connected applications, networks, and Web services from the workgroup to the data center.

For more information about Windows Server 2003, go to:  
<http://www.microsoft.com/windowsserver2003/default.aspx>

**Microsoft SQL Server 2000** provides scalable data storage and robust information management support for the enterprise.

For more information, visit:  
[www.microsoft.com/sql/default.aspx](http://www.microsoft.com/sql/default.aspx)

**Internet Information Services (IIS) version 6.0** is a powerful Web server that provides a highly reliable, manageable, and scalable Web application infrastructure for all versions of Windows Server 2003. IIS helps organizations increase Web site and application availability while lowering system administration costs.

For more information on IIS 6.0 go to:  
<http://www.microsoft.com/WindowsServer2003/iis/default.aspx>

**Microsoft Virtual Server 2005** is the cost-effective virtual machine solution designed for Windows Server 2003 to increase operational efficiency in software testing and development, server consolidation scenarios, and application re-hosting.

For more information on Virtual Server 2005 go to:  
<http://www.microsoft.com/windowsserversystem/virtualserver/default.aspx>

**Microsoft BizTalk Server 2004** helps organizations efficiently and effectively integrate systems, employees, and trading partners through manageable business processes enabling them to automate and orchestrate interactions in a highly flexible and highly automated manner.

For more information on BizTalk Server 2004 go to:  
[www.microsoft.com/biztalk/default.aspx](http://www.microsoft.com/biztalk/default.aspx)

**Microsoft Windows XP Professional**, the new standard in reliability and performance, is designed for businesses of all sizes and for individuals who demand the most from their computing experience.

For more information about Windows XP Professional, go to:



[www.microsoft.com/windowsxp/pro/default.mspx](http://www.microsoft.com/windowsxp/pro/default.mspx)

**Microsoft Rapid Economic Justification (REJ)** is an open architecture framework designed to help IT managers define the economic value of an IT initiative as a business performance improvement that is aligned with an organization's critical success factors. This methodology can enable any organization to optimize its resources within the context of acceptable risk.

For more information about business value and the REJ methodology, visit:

[www.microsoft.com/value](http://www.microsoft.com/value)

## For More Information

For more information about Microsoft products and services, call the Microsoft Sales Information Center at (800) 426-9400. In Canada, call the Microsoft Canada Information Centre at (877) 568-2495. Customers who are deaf or hard-of-hearing can reach Microsoft text telephone (TTY/TDD) services at (800) 892-5234 in the United States or (905) 568-9641 in Canada. Outside the 50 United States and Canada, please contact your local Microsoft subsidiary. To access information using the World Wide Web, go to:

[www.microsoft.com](http://www.microsoft.com)

For more information about Lighthouse International products and services, call (212) 821-9200 or (800) 829-0500 or visit the Lighthouse Web site at:

[www.lighthouse.org](http://www.lighthouse.org)

For more information on the LHI Electronic Vision Rehabilitation Record (EVRR) go to:

[www.evrr.com](http://www.evrr.com)

For more information on Satyam Computer Services, call 1-800-450-7605 or visit:

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