

**NUCLEUS  
RESEARCH**

RESEARCH NOTE D53

ROI ANALYSIS YOU CAN TRUST™

# ROI Case Study: Microsoft Business Solutions Harger Lightning

## **THE BOTTOM LINE**

Saddled with an unreliable, disconnected ERP system, Harger Lightning and Grounding deployed Microsoft Business Solutions Navision software to support all the company's functions from purchasing to sales to fulfillment. Process improvements introduced by the solution have led to payback in several forms, including reduced staffing burdens and a 15 percent drop in inventory.

**ROI: 191%**

**Payback: 7 months**

## **THE COMPANY**

Founded in 1960, Harger Lightning and Grounding provides solutions to the lightning protection and grounding industries. The company combines expertise and capabilities in engineering, systems design, product manufacturing, and installation. Harger, based near Chicago, Illinois, serves an international clientele.

## **THE CHALLENGE**

Harger's owners and managers decided in fall 2000 that the company desperately needed a new system to manage data for its enterprise resources and operations. The software that Harger was then using crashed several times a day, which hindered production and made system data unreliable. There were no links between the company's manufacturing software and its accounting software, and custom integration appeared to be prohibitively expensive. Together, the crashes and poor integration made it difficult for Harger to meet its fulfillment goals — custom orders, which make up an important part of the company's revenues, need to be shipped within 48 or even 24 hours. The system's many shortcomings also stood as an obstacle to meeting the long-term goal of presenting customers with real-time data.

## **THE STRATEGY**

In December 2000, Harger's executives and ERP stakeholders began evaluating software packages from vendors including FourthShift, Made2Manage, Lily, and Microsoft Business Solutions Navision software. In May, the evaluation team decided on Navision, mainly because of the following:

- Navision would provide a solution that supported all of Harger's data — for procurement, sales, manufacturing, shipping, and accounting — in a single package. This would enable straight-through processing from sales orders to fulfillment, without forcing additional integration costs.
- The evaluation team felt that Navision's functionality was well suited for the make-to-order segment of Harger's business.
- Harger's IT manager brought significant previous experience working with the Navision system, which created the potential for reduced deployment and customization costs.

- The solution would also be able to support engineers who need to develop bills of materials based on AutoCad designs sent by customers with their orders.

Harger’s IT manager and other department managers gathered initial system requirements. From May through July, the IT manager spent half of his days working alongside a developer brought in from the reseller, ICS Advantage, to install and customize the solution. The company owner provided project oversight.

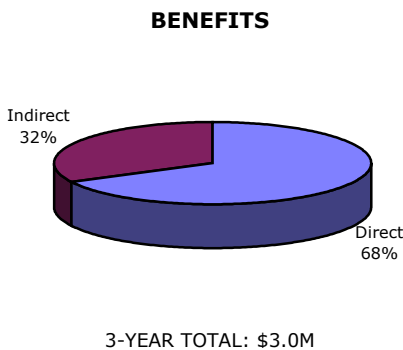
Once the team had completed the customization and had added third-party modules to support shipping, auditing, and product configuration, the solution went live to 30 users in July 2001. Early in the first year, Harger expanded its licensing agreement to accommodate 10 additional users.

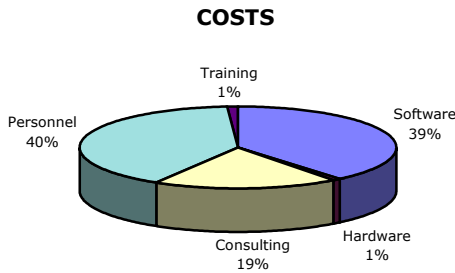
**KEY BENEFIT AREAS**

The deployment of Navision yielded payback in just over six months. The greatest bottom-line returns were realized in the following areas:

- Reduced personnel costs. Because of process improvements introduced by Navision, Harger was able to reduce staff in manufacturing, purchasing, sales, and shipping, saving about \$500,000 per year. In fact, Harger has been able to maintain reduced staffing numbers even as company business has continued to grow — the company estimates that without the solution, it would have had to add six new employees.
- Reduced inventory costs. Having more accurate inventory data has enabled Harger to reduce its on-hand raw materials by \$150,000.
- Increased productivity through reduced system downtime. With the old system, manufacturing staff lost three hours to system crashes in a typical week. IT staff spent the same amount of time rebooting and recovering lost data. Now both groups can spend that time productively.
- Increased ability to deliver on time. Formerly, when a sales agent took an order, he would write it out; an assistant would enter it into the orders database and then walk the printout over to the manufacturing department. Engineers who needed to create bills of materials worked without full access to inventory and pricing data. The integration of sales with manufacturing and the engineers’ use of the product configurator has reduced the percentage of orders past due to less than 10 percent.

Project leaders believe that many of these benefits have also contributed to increased customer satisfaction. Other features of the solution are explicitly designed to keep customers happy — such as the automated emails that notify clients the moment a sales order, shipment confirmation, or invoice is posted.





3-YEAR TOTAL: \$663,590

### KEY COST AREAS

Personnel commitments were the greatest cost area associated with the deployment: The cost of internal IT staff time devoted to deployment and ongoing maintenance and the addition of a new data inspection position will have accounted for 40 percent of project costs during the first three years of system use. Software licenses for Navision and a handful of third-party add-ons make up another 39 percent of the total expenses, while the cost of consultant support during deployment added another 19 percent. The small, remaining amount of the project budget went toward training for solution users and one new server that was used to limit the impact of deployment and testing on the production environment.

### LESSONS LEARNED

Harger’s project team reports that the deployment of Navision has been virtually trouble free. They attribute their success to several factors that other companies may be able to replicate, especially the following:

- Harger’s project team knew from the outset exactly how they wanted to connect operational systems to the finance department’s tracking of revenue and how they wanted to set up business reports.
- The internal project leader already had significant experience working with the Navision system.
- The team utilized data import routines supplied by Navision to facilitate the transfer and conversion of historical data from the old system.
- Harger decided to deploy Navision for virtually all company functions rather than integrate it with other systems.

### CALCULATING THE ROI

Nucleus Research analyzed the costs of software, hardware, personnel, consulting, and training since deployment to quantify Harger’s investment in the Navision system. The benefits calculated include savings through reduced personnel costs and inventory as well as productivity gains resulting from reduced system downtime. Productivity gains were multiplied by a correction factor to account for inefficiencies in converting time saved into additional time spent productively. Because of a lack of reliable data measuring increased customer satisfaction, this benefit was not included in the financial model.

**SUMMARY**

Project:	<b>Microsoft Business Solutions - Navision</b>
Annual return on investment (ROI)	<b>191%</b>
Payback period (years)	<b>0.55</b>
Net present value (NPV)	<b>806,815</b>
Average yearly cost of ownership	<b>221,197</b>

<b>ANNUAL BENEFITS</b>	<b>Pre-start</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Direct	0	670,000	692,500	692,500
Indirect	0	329,325	329,325	329,325
<b>Total Benefits per Period</b>	0	999,325	1,021,825	1,021,825

<b>DEPRECIATED ASSETS</b>	<b>Pre-start</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Software	136,480	31,294	23,634	0
Hardware	5,000	0	0	0
<b>Total per Period</b>	141,480	31,294	23,634	0

<b>DEPRECIATION SCHEDULE</b>	<b>Pre-start</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Software	0	27,296	33,555	38,282
Hardware	0	1,000	1,000	1,000
<b>Total per Period</b>	0	28,296	34,555	39,282

<b>EXPENSED COSTS</b>	<b>Pre-start</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Software	0	13,648	26,844	26,844
Hardware	0	0	0	0
Consulting	112,442	12,000	0	0
Personnel	80,750	62,500	62,500	62,500
Training	7,154	0	0	0
Other	0	0	0	0
<b>Total per Period</b>	200,346	88,148	89,344	89,344

<b>FINANCIAL ANALYSIS</b>	<b>Results</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Net cash flow before taxes		879,883	908,847	932,481
Net cash flow after taxes		438,443	459,884	485,881
<b>Annual ROI - direct and indirect benefits</b>				<b>191%</b>
Annual ROI - direct benefits only				123%
<b>Net present value (NPV)</b>				<b>806,815</b>
<b>Payback (years)</b>	<b>0.55</b>			
Average annual cost of ownership		461,268	287,123	221,197
3-year cumulative ROI	334%			
3-year IRR	177%			

**FINANCIAL ASSUMPTIONS**

All government taxes	50%
Discount rate	15%

All calculations are based on Nucleus Research's independent analysis of the expected costs and benefits associated with the application profiled in the accompanying case. Financial modeling tool, format, and methodology copyright Nucleus Research Inc., all rights reserved.