

# THE **e**LEARNING DEVELOPERS' JOURNAL

Strategies and Techniques for Designers,  
Developers, and Managers of eLearning

JOURNAL™

## THIS WEEK — MANAGEMENT TECHNIQUES

### Doing the Numbers: Return on Investment for e-Learning

BY BILL BRANDON

**W**ith the economy more or less stalled, for the first time in a decade, we're hearing some phrases again — “cost containment,” for example, or “cost justification.” Measurement and accountability are the order of the day in many organizations, and frequently the workhorse that delivers the order is return on investment (ROI) analysis.

Yes, ROI is back and it isn't going away again any time soon. Mostly ROI seems to be a concern for line managers, Chief Financial Officers (CFOs) and Chief Information Officers (CIOs), but demonstrated ROI is also being demanded of e-Learning initiatives on a regular basis. These initiatives use (ever larger) quantities of time, money, staff, and infrastructure. This elevated profile may attract attention and a call for proof that value will be delivered.

Return on investment is not an obscure ritual intended to make the lives of e-Learning managers miserable. ROI is an accepted tool for communicating business value for the purpose of managing it. It is the most effective means generally available for maintaining accountability.

ROI is not a requirement for every project (many of them are too small to be

worth the effort), and it is meaningless if done to “prove” the value of **all** e-Learning. But every e-Learning professional needs to understand ROI, to know how to demonstrate support through ROI analysis, and to know when to do that analysis. Even though you may have heard it said too many times, it is very important to make a strong, visible connection between e-Learning and expected business results.

In this article, you'll see the fundamentals of ROI and several of the common methods used to evaluate the level of return to be expected from an e-Learning project. You'll also understand when to use these methods, and what else you will need to demonstrate the business value of your project.

Outside of the accounting department,  
*Continued on next page*

*Discussions of Return on Investment (ROI) for e-Learning are pervasive, and often too abstract to be useful. Sometimes ideas presented as ROI may even be misguided. Here is a complete guide to the issues, models, and step-by-step processes for conducting and presenting an ROI analysis. Everyone is competing for scarce resources these days — here's how to prepare your best case!*

# THE eLEARNING DEVELOPERS' JOURNAL

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As in any profession, there are many different perspectives about the best strategies, techniques and tools one can employ to accomplish a specific objective. This **Journal** will share these different perspectives and does not position any one as "the right way," but rather we position each article as "one of the right ways" for accomplishing a goal. We assume that readers will evaluate the merits of each article and use the ideas they contain in a manner appropriate for their specific situation. We encourage discussion and debate about articles and provide an Online Discussion board for each article.

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managers often seem to think of ROI as if it were an absolute, simple, black-and-white test of tangible value. It is, in fact, not that cut-and-dried. Demonstration of ROI applies mainly to individual projects, so it is more a tactical tool than strategic. At the same time, it is important to understand that an ROI analysis is often not a trivial exercise, and there are costs associated with it. Common sense should rule in this regard. If the analysis will cost more than the project (and it can be expensive and time-consuming), there is no reason to go forward with the analysis, at least not in the most rigorous forms.

Demonstrating ROI is almost more art than science. Getting executive management to accept your demonstration of business value is sometimes as much an exercise in presentation, negotiation, collaboration, compromise, and persuasion as it is mathematics. In fact, things often go better if you approach ROI as a consensus-based process from the beginning.

Analysis of ROI is not an activity you will be doing on the back of an envelope; it is not well-served by "quick and dirty" solutions. I recommend skipping the "ROI Calculators" that you will find online. Most of them miss the important points completely:

- The assumptions made before using the calculators are important and must be documented.
- It takes more than one ROI model to establish value, and not all ROI models are valid for any given case.
- Collaboration with customers and senior management in identifying e-Learning benefits is critical — ROI determination is not a one-sided exercise.
- It is too easy to fall prey to the temptation to just "play with the numbers" until a good result is obtained.
- Calculators can only "do numbers" — they can't compute the value of the intangibles.

## Value

Value is a tricky issue, mainly because every organization is likely to have its own particular set of criteria for establishing value. For a business, value is an economic concept: Did we make a profit? Did the shareholders' equity increase? For a government organization, value relates to a different question: Did we provide a service? Did we fulfill our mission? For an educational or academic entity: Did we make it

possible for people to learn? Did we advance the state of knowledge?

It is important to remember that "saving time and money" and "increasing profits" are not primary educational objectives, just as "learning" is not a primary business objective. This seems to be a fundamental disconnect for many managers concerning the creation and measurement of value. As e-Learning professionals, we are stuck squarely in the middle of this conflict. What we must do is to recognize the conflict, recognize the importance of both sets of values and objectives, and do the best we can to make the right choices that optimize achievement of both.

Fortunately, we have excellent tools for defining and measuring value. On the business side, we have business planning processes, ROI, and business metrics. On the learning side, we have the whole range of instructional system design and performance technology methods. We just need to be sure that we address both business value and educational value. After all, a cheap e-Learning program is no bargain if nobody learns. Not only that, the most thorough, best-supported e-Learning program in the world, even if designed to correct a problem that everyone agrees is serious, may create no value if it costs more than not addressing the problem at all, or if it does not create the critical intangible results needed.

The reason for doing an analysis of return on investment is to provide a picture of the business value of a project. But what is business value? The answer changes across the life of a product line and of a company. Cutting costs is not always the highest value in a given company, although that is certainly the focus for many organizations today. Sometimes increasing market share means more than cutting costs. At other times, improving profitability (usually by raising output without increasing expenses — especially staff) is most important. There are times when improving the product or service, whether or not this immediately increases market share, is the most important value.

Because e-Learning enables value, rather than producing value, the business value of e-Learning comes in the improvements made in profitability, productivity, and service when people apply what they have learned, not from the technology by which they learned it. Essentially, to find an answer to the question, "What is value?"

you must tune in to what the company is doing and to what the leadership's values are.

Value on the business side is shaped by:

- The type of company or organization
- The organization's position in the industry/product life cycle
- The corporate strategy with respect to cost leadership, product differentiation, and market focus
- The evolution of the company and its products and services

For the purpose of analyzing return on investment, we are going to ignore the question of whether or not the e-Learning design is effective (will people learn?). At the most, when comparing two or more possible e-Learning projects for the purpose of selecting the one with the optimum ROI, we are going to assume they are equally effective educationally.

## Forty-seven ways to look at ROI

There really aren't forty-seven ways (yet), but the number is growing all the time. There are several "standard" financial models for assessing the tangible return on investment in e-Learning. There are also a number of models for evaluating intangible or "soft" benefits such as the impact of improved performance on other groups and on critical goals.

In addition to these two groups of mod-

els, there are a number of new ROI metrics invented by consulting firms. These will not be discussed in this article (many of the metrics are proprietary anyway), but you should have no difficulty understanding these models when you come across them. Examples include approaches to benchmarking e-Learning efforts based on their alignment with corporate strategy, ability to partner with e-Learning vendors, and level of technology integration. Other approaches involve development of scorecards that provide unambiguous metrics in business-value terms rather than educational jargon.

## Classic approaches to tangible value

The intent of these approaches is to show the financial impact that a given investment will have on business.

There is a core set of four commonly-used ROI models. They are mathematical, but even so you may find the results are not consistent from one model to the next, even on the same project with the same set of assumptions. Your organization may have a standard practice that requires the use of one of these in developing ROI analyses. You should talk to your CFO or the executive in charge of accounting to come to agreement about which of the models to use.

If the project is expensive, however,

don't base your decision or justification on just the one mandated model. A million-dollar initiative deserves and will get more scrutiny than a ten thousand dollar program. Each of these models brings out different aspects of project value, and you will want to consider as many different views as you have time and resources to develop. If you present only one model, be prepared for objections based on another model.

The four models are:

- Payback or Breakeven Analysis
- Accounting Rate of Return (ARR)
- Net Present Value (NPV)
- Internal Rate of Return (IRR)

Examples given in this article are basic and a bit oversimplified in order to illustrate how the models operate. You will want to work with your accounting group to develop your models for your project.

## Payback

This is the most widely-used measure for evaluating potential investments. With payback, the issue isn't profitability. Payback just asks, "How long will it take to break even — to get all the money back?"

The virtue of payback is that it is easy to calculate and easy to understand. Managers who remember the economic downturn of the early 1990's may have some past experience with this method because it tends to be used more when

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business is down. Payback has two key weaknesses. It does not take into account the time value of money (more on this later) or the financial performance of the investment after breakeven. While payback can help establish relative priority between potential e-Learning projects, it may be risky to stake the entire case for an e-Learning initiative on this model.

If you find yourself needing to evaluate and present an e-Learning project based on payback, you should be aware of what the standards are in your company for payback. If your company routinely rejects projects with payback periods of 36 months or longer, you want to take this into account. You should also be aware of policy regarding payback in groups on whom you will depend. For example, some IT departments will not consider a project with more than a 24-month payback. If the infrastruc-

ture improvements you need for your e-Learning initiative will come out of the IT budget, know that the payback for them may have to come in at 24 months or less, not 36 months. This is why at the beginning of the article, I pointed out the importance of negotiation, compromise, and persuasion to successful demonstration of business value.

An investment's payback period is expressed in years. It is equal to the net investment amount divided by the average annual cash flow from the investment. Be sure to include all the associated costs, such as maintenance and hardware upgrades, as well as any training or additional staff required to support e-Learning development and administration. (See the example in Table 1.)

**TABLE 1** *Payback example*

**Project: Customer Service Training**

Training currently delivered in classroom, redeveloped in-house to be delivered as e-Learning.

**Net Investment: \$247,000**

**Payback (in years) = Net investment / average annual cash inflow = 1.88 years (22.6 months)**

Year	Cash inflow
1	\$65,825
2	\$197,480
Total	\$263,305
Average cash inflow	\$131,653

**TABLE 2** *Accounting rate of return example*

**Project: Same as Table 1, projected over six years**

**Net Investment: \$327,000**  
**Capital investment: \$230,000**  
 (included in net amount)  
**Salvage value of hardware: \$0 at the end of the project**

**Average annual cash inflow: \$219,418**

**Annual depreciation: \$38,333 (average)**

**Accounting rate of return: = (Annual cash inflows - depreciation) / initial investment = (\$219,418 - \$38,333) / \$327,000 = 55.4%**

Year	Cash inflow
1	\$65,825
2	\$197,480
3	\$263,300
4	\$263,300
5	\$263,300
6	\$263,300
Total	1,316,505

*Note that the cumulative ROI over the whole five years is (\$1,316,505-\$230,000)/\$327,000, or 332.3%*

## Accounting Rate of Return (ARR)

The accounting rate of return is another relatively simple way to calculate the return on a major project or purchase. This is the model used by many of the ROI calculators on the Web, and in vendor claims. The ARR can give a quick estimate of a project's return and, like payback, it allows you to compare different projects. Unlike payback, ARR considers the returns for the entire life of the project. Unfortunately, ARR also uses only income data instead of cash flow, and it does not consider the time value of money. These weaknesses leave ROI cases based only on ARR open to serious objections.

To compute the accounting rate of return, subtract the annual depreciation from the annual cash inflows and divide the result by the initial investment. Depreciation is a simple calculation, using the "straight-line" method: subtract the salvage value of any equipment bought for the project from the original cost of the equipment, and divide by the useful life of the equipment. (See Table 2 for an example.)

## Net Present Value (NPV)

Net present value is most appropriate for long-term projects. Its strength is that it considers the time value of money. NPV expresses future cash flows in terms of their value today. Money has a cost (interest). Most people would rather have a dollar today than a dollar a year from now, but not because they need instant gratification. If you earn 10% interest on your money in an investment, a dollar today will be worth \$1.10 in a year. So you could say that the present value of \$1.10 a year from now is \$1.00. You would prefer to avoid a situation in which NPV was negative — where the present value of \$1.10 a year from now is \$1.25.

The NPV of an investment is the present (discounted) value of future cash inflows minus the present value of the investment and any associated future cash flows. The result will be either positive or negative, and is often used as a "go/no go" indicator. When comparing two potential e-Learning projects, the bigger NPV indicates the project of choice (all other things being equal).

Figuring NPV involves use of discount rates equal to a desired rate of return and some fancy math. Fortunately, spreadsheets have automated the math so that all you need to enter is the undis-

counted cash flows. The yearly cash flows for many e-Learning projects are cost savings, so these are fairly straightforward. (See Table 3.)

Determining the discount rate to use can be tricky. Sometimes the practice is to use the organization's average cost of capital. I suggest you develop your model with the close assistance of your finance group.

There are a couple of cautions in using NPV. One is that NPV is not appropriate for projects that do not have clearly defined cash flows. If the benefits from the project are not financial (for example, if the benefits amount to faster achievement of some corporate target), do not use NPV. In some cases, projects might have the same NPV but different levels of risk and capital requirements. Suppose one project requires an initial investment of \$10,000 and another requires an investment of \$100,000. Both have an NPV of \$200. In most cases, the \$10,000 investment is going to be chosen because the risk is less and the amount of capital tied up is lower.

### Internal Rate of Return (IRR)

Internal rate of return is sometimes referred to as the "hurdle rate." Accountants and finance executives like it because it is simple (for them) and takes into account the time value of money. The IRR is the discount rate that results in a net present value of zero for a series of future cash flows.

The effect of IRR is to provide a break-even rate of return. It shows the discount rate below which an investment gives a positive NPV. Above that rate, the NPV is negative and the investment should not be made. At the break-even rate, the value of the cash outflows equals the value of the cash inflows.

IRR is not as easy for non-accountants to understand or to calculate as NPV (although spreadsheets also handle the math — using approximations). Like NPV, IRR is used as a "go/no go" measure, and it usually works well for analysis of projects like e-Learning. If you will be required to use IRR, be sure to get some assistance from your accounting or finance groups in setting up the analysis. (In the ongoing example in this article, shown in Tables 1 through 3 and in the worked-out example in the sidebar at the end of this article, the IRR is so high that NPV will always be positive for any realistic discount rate.

Therefore, the author has chosen not to provide a worked example.)

### Some additional cautions about the financial ROI models

There are limitations to the accuracy of the data in most ROI models, so it's important to avoid being misled by precision that may be more apparent than real. Also, decision-makers are well aware of the ways that numbers can be "tweaked" to produce a desired (but probably impractical) result. Don't let the finger of suspicion fall on your models! Be conservative, and be appreciated.

Look beyond the numbers and ask:

- Is the technology to be used in the project mature? In other words, will you find yourself forced to change to a newer or different technology before the project is paid off?
- Do you have the skill sets and support in house to sustain the project? Did you include the cost of acquiring and maintaining the skill sets in the cost?
- Do the assumptions and the approach outlined fit your overall strategy? Do they fit the strategy and the culture in the company?

### Full business impact (including intangibles)

e-Learning, like other human performance interventions, has complex effects on enterprise-wide systems, and the classic approaches are not completely effective at

capturing the true business value. Newer approaches to assessing the full business impact include the intangible value and results, in addition to the financial considerations just described.

Progressive firms use these approaches to measure the value of technology applications, including e-Learning. The problem is that not all organizations are "progressive," so there could be some difficulties with getting these measures accepted. There are both risks and benefits in these newer approaches.

- Presenting the intangible results may enable a better match to mission goals in organizations without purely financial metrics, and may help in any organization to obtain management support for e-Learning initiatives.

- The success of presentations based on non-financial benefits can be affected by how well end-user needs are defined and understood, and by how well management buy-in is addressed. The extent to which internal technology skills are needed, the strength of the vendors involved, and the organization's ability to manage the complexity of the intervention are also critical factors that must be addressed in presentations.

### Balanced Scorecard

Although there are a number of these methods, the balanced scorecard is probably the best-known and most widely used. If your company does not use the balanced

**TABLE 3** Net present value (NPV) example

**Project: Same as Tables 1 and 2**

Undiscounted cash flow, by project year					
Current (0)	1	2	3	4	5
(\$39,175)	\$55,480	\$243,300	\$243,300	\$243,300	\$243,300

Year	Discount factor @ 8%	Cash flow	Present value
Current (0)	1.000	(\$39,175)	(\$39,175)
1	0.925	\$55,480	\$51,319
2	0.857	\$243,300	\$208,508
3	0.794	\$243,300	\$193,180
4	0.735	\$243,300	\$178,826
5	0.681	\$243,300	\$165,687
		Net: \$989,505	Net: \$758,345

*By itself, the NPV for this project only indicates a favorable result. NPV is most useful when comparing two projects.*

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scorecard idea, you may still be able to use its framework to present the benefits of your e-Learning project in a way that will make sense to senior managers. It is the only one of the full business impact methods to be discussed here.

The balanced scorecard is an all-encompassing approach to improving an organization's performance in four areas: financials, customers, learning, and internal processes. The idea is to take a long-term, holistic approach, and not focus solely on financials (however, financials are still seen as the most important element). The balanced scorecard is also a forward-looking method so it may be well suited to presenting the value of e-Learning.

Essentially, in presenting the business value of e-Learning using the balanced scorecard, you want to relate the benefits of your specific implementation to each of the four quadrants of the scorecard. Show how the e-Learning program objectives relate to the objectives and important questions in each area, remembering that the focus is on process, not on metrics. For example:

- **Financials:** How can we improve profitability in the XYZ product line?
- **Customers:** How can we keep our best customers?
- **Learning:** How can we keep our retail operation employees aligned with company goals?
- **Internal Processes:** How can we improve our shipping operation?

If your company is using the balanced scorecard, it may be breaking down high-level strategies in the four areas into objectives, measurements, targets, and initiatives. In this case, you will want to relate your e-Learning project to those appropriately, to show the support.

The balanced scorecard is a large topic in and of itself. For more information, please visit the balanced scorecard's online home at <http://www.balancedscorecard.org>.

### Where the rubber meets the road: Procedure for expanded ROI analysis

Here, step by step, is a process that has worked well for many managers in the past (the author included). This is a guide, not a "cookie cutter," and will require fine-tuning to meet your situation. See Sidebar, "ROI example" on pages 8 and 9 for a worked-out example.

**Organize your case**

The first thing is to think through all the possible benefits from the proposed e-Learning application. Ask yourself, "What are the benefit areas affected by the proposal?" There are four major categories.

**Cost reduction:** Eliminating training-related travel expenses or the cost of printed course materials are good examples of cost reduction. Cutting the *length* of learning time is seldom a cost savings, especially for salaried employees or for hourly employees who will participate in e-Learning "on their own time." The salaries or wages will be paid whether the learner is in class, learning online, or doing productive work. Generally, cutting the length of time required to achieve learning objectives will either result in a quantifiable productivity gain, or an increase in value. In the case where e-Learning reduces the length of a training program that involves large numbers of people on an ongoing basis, it may be possible to show a potential reduction in head count or requirements for new hires and reflect this as a cost reduction. In other cases, an e-Learning program may result in improved employee performance of a nature that means supervisors spend less time coaching. If this also means the supervisors' span of control is increased, it may be possible to show cost reduction through decreased supervisor headcount.

**Productivity:** This can be a tricky area. Usually you will want to show that the e-Learning program has enhanced employee skills so that the company can expand without having to add head count. Be conservative, and avoid the temptation to convert productivity gains directly into cost reductions.

**Revenue gain:** Once again, be conservative in your claims. Any projected revenue gain coming directly from e-Learning results is bound to be contested.

**Increase in value** (including value of intellectual property): These benefits tend to be intangible in nature, but they can be the most important elements in making your case and getting support for an e-Learning project. There are three essential questions to ask.

- How will other groups be impacted? How will business processes be improved? This is sometimes referred to as "value linking."
- Will other projects realize benefits sooner? This is "value acceleration."

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- How will other job roles be affected? This may be referred to as "job enrichment."

List the direct, quantifiable benefits to the organizations whose employees are being trained, assigning each possible benefit to one of these categories: cost reduction, productivity increase, revenue gain. Next, list the benefits to the business from value linking, value acceleration, and job enrichment. Finally, decide which of these benefits can be credibly quantified, without necessarily assigning a number to each at this point.

In large, high-dollar projects that will affect lots of learners, look for ways to demonstrate big productivity gains or to reduce headcount. In smaller projects with lower user numbers, the role of intangible benefits may be more important. What other corporate goals are supported by this particular project? Will this project help to improve the ROI of another department's program?

Rank these benefits, starting with those that most closely support the objectives of the decision makers and are easiest to attribute to e-Learning. For example, an e-Learning program that replaces training at a central site, or one that takes trainers off the road, will reduce travel costs. This will be easy to see, believe, and attribute to the new e-Learning program. On the other hand, a 10% increase in sales will be harder to project with credibility or to attribute to e-Learning alone.

It is not necessary to rank the benefits in strict 1-2-3 order at this point. You might instead just identify the top two or three, the bottom two or three, and leave the rest in a group "in the middle."

You are going to use only the top-ranked benefits in the initial analysis, to see if their return can support the training program. You are going to do this because the ROI used in presenting the program must be the "right size." It must be big enough to get approval, but not so big as to be unbelievable. Talk to your CFO to find out what the correct range is in your company.

The "rule of thumb" used to be that you wanted to show breakeven (payback) in two to three years for cash flow, and a positive bottom-line impact on profit and loss (P&L) in the first or second year. However, in these times there may be more pressure for faster results, especially if the cost of your program is enough to show up on the radar screens of investors. These days, analysts are looking at factors that they didn't look at five years ago.

At least a 50% ROI (computed as ARR) used to be the minimum, but once again, with profitability pressures and competition from many other projects for resources, this probably would be a non-starter unless there was substantial support from the intangible benefits. At the same time, a claim of over 500% ROI will need very solid evidence or it may look like pure hype.

If necessary and appropriate, add in further benefits to show a larger ROI (staying within the CFO's guidelines). In other words, add demonstrable and quantifiable benefits, don't "tweak" the numbers. However, it will be very useful later on to point out to decision makers all the benefits not included in the model. Document the claims, so that you have the information if you need it. When you prepare your presentation, you will be able to confidently "leave them wanting more," knowing you have the facts to satisfy that need.

Finally, thinking ahead, when the program is implemented, track information on all the benefits, whether they were used in the justification or not. This is especially true for multi-year programs. You will be glad you did when the next budget cycle rolls around.

**Identify the costs**

Now you can begin putting actual numbers into a spreadsheet or chart. Begin by separating capital expenses from operating

expenses. This is an important distinction whenever equipment purchases are involved. Be sure to follow your organization's policy regarding capitalization.

Remember to include such easily overlooked costs as increased disk storage for media, programs, records, and for the learning management or learning content management system (LMS or LCMS). If additional bandwidth is going to be required, for example to support streaming media, and if hiring or training experts in software or hardware will be needed, these must be included as well. If your e-Learning will be SCORM-compliant and there may be firewall or domain issues to deal with, partner with IT early to identify any costs that may be involved in working around these issues. Finally, if there are opportunities to outsource development, be sure these are reflected appropriately as costs and be ready to show a simple analysis that demonstrates the ROI of outsourcing vs. in-house development. All of these seem obvious, but the number of e-Learning professionals who overlook them would

surprise you.

In the next step, you are going to identify the cash flows during the life of your e-Learning project. Create a detailed cash inflow chart: Show the cash inflow (the financial benefits) by year for the benefits you chose when you were organizing your case. Then show total savings, revenue gains, etc. for each year and for the project life.

At this point, you can create a projected cash flow chart over the life of the project; this will show when payback occurs. You may also want to calculate this using the formula shown earlier in this article, just to make sure all is correct. Cash inflow, by year, is based on the benefits cited and reduced by the use factor for that year, if the program will be implemented in stages. Cash outflow, by year, is based on the projected costs; do not apply depreciation at this stage of the analysis. Calculate and show net cash flow, by year (this is the difference between inflow and outflow). The last step is to calculate and show cumulative cash flow, by year.

Finally, you will deal with the capital expenses, if you have any (i.e., you must buy equipment or software that won't be "expensed"). Show the depreciated costs in detail by year, to arrive at the total depreciated cost by year. Show expenses not depreciated, and show total depreciated costs.

### **Calculate the ROI (more than one way)**

You will have addressed payback earlier, when the projected cash flow chart was created. The next step will be to compute the real rate of return. This is a simple five-step task.

- Show projected cash inflow by year, and total for the project life
- Show projected cost (depreciated, if appropriate)
- Show annual Profit and Loss (P&L) impact (inflow minus cost, by year)
- Show cumulative P&L impact
- Show ROI as a percentage (Annual P&L divided by Depreciated Cost)

If appropriate to your project, you can

### **SIDEBAR** ROI example

A company is considering the use of e-Learning. One of the company's goals is to maintain service quality while limiting expenses and new hires.

The company is now using a two-day instructor-led classroom course to train 500 new customer service representatives each year to deal effectively with angry customers in certain very specific situations. This course is offered once every six months at each company location. Turnover in the customer service positions is quite high, and a study recently found that new employees who take the course within one month of hire are most likely to be successful and to stay with the company at least one year. The study suggested that if all employees had the training within one month of hire, the company could retain 80 new hires each year that are now being lost, at a replacement cost of \$2000 each.

*Continued on next page*

Cash Inflow (Benefits)	Year						Total
	1	2	3	4	5	6	
<b>Savings: Reduced head count and turnover</b>							
New hires/year	500	500	500	500	500	500	
Total training days	1,000	1,000	1,000	1,000	1,000	1,000	
Reduced days (50%)	500	500	500	500	500	500	
Head count reduction	2	2	2	2	2	2	
Avg. Rep. Salary:	\$26.0	\$26.0	\$26.0	\$26.0	\$26.0	\$26.0	
Head count savings	\$52.0	\$52.0	\$52.0	\$52.0	\$52.0	\$52.0	\$ 312.0
Reduction in turnover	80	80	80	80	80	80	
Hiring cost per person	\$2.0	\$2.0	\$2.0	\$2.0	\$2.0	\$2.0	
Turnover savings	\$160.0	\$160.0	\$160.0	\$160.0	\$160.0	\$160.0	\$ 960.0
<b>Total: Headcount and turnover savings</b>	<b>\$212.0</b>	<b>\$212.0</b>	<b>\$212.0</b>	<b>\$212.0</b>	<b>\$212.0</b>	<b>\$212.0</b>	<b>\$1,272.0</b>
<b>Savings: Course delivery</b>							
Classroom trainee cost	\$17.5	\$17.5	\$17.5	\$17.5	\$17.5	\$17.5	
e-Learning trainee cost	\$4.2	\$4.2	\$4.2	\$4.2	\$4.2	\$4.2	
Trainee cost savings	\$13.3	\$13.3	\$13.3	\$13.3	\$13.3	\$13.3	
Instructor travel savings	\$20.0	\$20.0	\$20.0	\$20.0	\$20.0	\$20.0	
Instructor salary	\$18.0	\$18.0	\$18.0	\$18.0	\$18.0	\$18.0	
<b>Total Savings</b>	<b>\$51.3</b>	<b>\$51.3</b>	<b>\$51.3</b>	<b>\$51.3</b>	<b>\$51.3</b>	<b>\$51.3</b>	<b>\$307.8</b>

*Note: All dollar figures shown are in thousands, rounded off to the nearest hundred dollars.*

**SIDEBAR ROI example** (continued from previous page)

An effective e-Learning course has been developed and tested. It will reduce training time by 50%, to one day. The program provides automated practice in dealing with angry customers. As a result, supervisors spend less time coaching new customer service representatives. Learner materials for the old program cost \$35 per trainee; in the new program, total cost per learner is \$10. In addition, there is no requirement for a trainer to travel to company locations.

There are other benefits, but these are enough to justify the program.

There are some implementation details that are important. First, the new program will take time to roll out. In the first year, the use rate will not exceed 25%. The expected use rate in the second year is 75%. The program should be in full use by the third year. Finally, the capital costs of the project will be depreciated over five years.

Projected Six-Year Cash Flow							
	Year						
	1	2	3	4	5	6	Total
<b>Cash Inflow</b>							
Reduced headcount, turnover	\$212.0	\$212.0	\$212.0	\$212.0	\$212.0	\$212.0	\$1,272.0
Course delivery	\$51.3	\$51.3	\$51.3	\$51.3	\$51.3	\$51.3	\$307.8
Total Inflow	\$263.3	\$263.3	\$263.3	\$263.3	\$263.3	\$263.3	\$1,509.8
Utilization Factor	25%	75%	100%	100%	100%	100%	
<b>Projected Cash Inflow</b>	<b>\$65.8</b>	<b>\$197.5</b>	<b>\$263.3</b>	<b>\$263.3</b>	<b>\$263.3</b>	<b>\$263.3</b>	<b>\$1,316.5</b>
<b>Cash Outflow</b>							
Hardware	\$20.0	\$30.0	\$0.0	\$0.0	\$0.0	\$0.0	\$50.0
Courseware	\$80.0	\$100.0	\$0.0	\$0.0	\$0.0	\$0.0	\$180.0
Maintenance	\$0.0	\$5.0	\$5.0	\$5.0	\$5.0	\$5.0	\$25.0
Updates	\$0.0	\$0.0	\$15.0	\$15.0	\$15.0	\$15.0	\$60.0
Implementation	\$5.0	\$7.0	\$0.0	\$0.0	\$0.0	\$0.0	\$12.0
<b>Cash Outflow</b>	<b>\$105.0</b>	<b>\$142.0</b>	<b>\$20.0</b>	<b>\$20.0</b>	<b>\$20.0</b>	<b>\$20.0</b>	<b>\$327.0</b>
<b>Net Cash Flow</b>	<b>(\$39.2)</b>	<b>\$55.5</b>	<b>\$243.3</b>	<b>\$243.3</b>	<b>\$243.3</b>	<b>\$243.3</b>	<b>\$989.5</b>
<b>Cummulative Cash Flow</b>	<b>(\$39.2)</b>	<b>\$16.3</b>	<b>\$259.6</b>	<b>\$502.9</b>	<b>\$746.2</b>	<b>\$989.5</b>	

Depreciated Costs in Detail							
	Project Year						
Capital Expenses Depreciated	1	2	3	4	5	6	(Total)
(Hardware, courseware)							
Year 1	\$20.0	\$20.0	\$20.0	\$20.0	\$20.0		(\$100.0)
Year 2		\$26.0	\$26.0	\$26.0	\$26.0	\$26.0	(\$130.0)
<b>Other Expenses Not Depreciated</b>							
(Maintenance, Updates, Implement)	\$5.0	\$12.0	\$20.0	\$20.0	\$20.0	\$20.0	
<b>Total Cost (Depreciated)</b>	<b>\$25.0</b>	<b>\$58.0</b>	<b>\$66.0</b>	<b>\$66.0</b>	<b>\$66.0</b>	<b>\$46.0</b>	

Return on Investment							
	Year						
	1	2	3	4	5	6	Total
Projected cash inflow	\$65.8	\$197.5	\$263.3	\$263.3	\$263.3	\$263.3	\$1,316.5
Projected cost (depreciated)	\$25.0	\$58.0	\$66.0	\$66.0	\$66.0	\$46.0	\$327.0
Annual P&L impact	\$40.8	\$139.5	\$197.3	\$197.3	\$197.3	\$217.3	\$989.5
Cumulative P&L impact	\$40.8	\$180.3	\$377.6	\$574.9	\$772.2	\$989.5	
ROI (%) (P&L/cost)	163%	240%	299%	299%	299%	472%	
Cumulative ROI = 302%							

Note: All dollar figures shown are in thousands, rounded off to the nearest hundred dollars.

# About the Guild



**The eLearning Guild™** is a Community of Practice for designers, developers, and managers of e-Learning.

Through this member-driven community, we provide high-quality learning opportunities, networking services, resources, and publications. Community members represent a diverse group of instructional designers, content developers, web developers, project managers, contractors, consultants, and managers and directors of training and learning services — all of whom share a common interest in e-Learning design, development, and management.

## The eLearning Developers' Journal™

The Guild publishes the only online "e-Journal" in the e-Learning industry that is focused on delivering real world "how to make it happen in your organization" information. The Journal is published weekly and features articles written by both industry experts and members who work every day in environments just like yours. As an active member, you will have unlimited access to the Journal archive.

## People Connecting With People

The Guild provides a variety of online member networking tools including online discussion boards, and the Needs & Leads™ bulletin board. These services enable members to discuss topics of importance, to ask others to help them find information they need, and to provide leads to other members.

## Resources, Resources, Resources

The Guild hosts the e-Learning industry's most comprehensive resource knowledge database. Currently there are over 2,300 resources available. Members have access to all of these resources and they can also post resources at any time!

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The Guild has an ongoing industry research service that conducts surveys on 20 topics each year. These topics are identified by the Research Advisory Committee. The data collected is available for all members.

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now compute the net present value of the project or the internal rate of return. Again, you may wish to call on your accounting or finance group for assistance with these tasks.

The last step is to lay out the intangible returns (listed earlier as "Increase in value"), using the balanced scorecard quadrants to relate them to the larger business values. You should now be ready to present your e-Learning initiative for review and (we hope) approval.

## Closing

So now you know how to do the numbers. More important, you know how to use the numbers to create a picture of the business value of your e-Learning project. It is important never to base a decision on cost without considering value, or to advocate a project on assertions of value without making sure the costs are in line. That is the real reason for making ROI analyses. 

## AUTHOR CONTACT

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