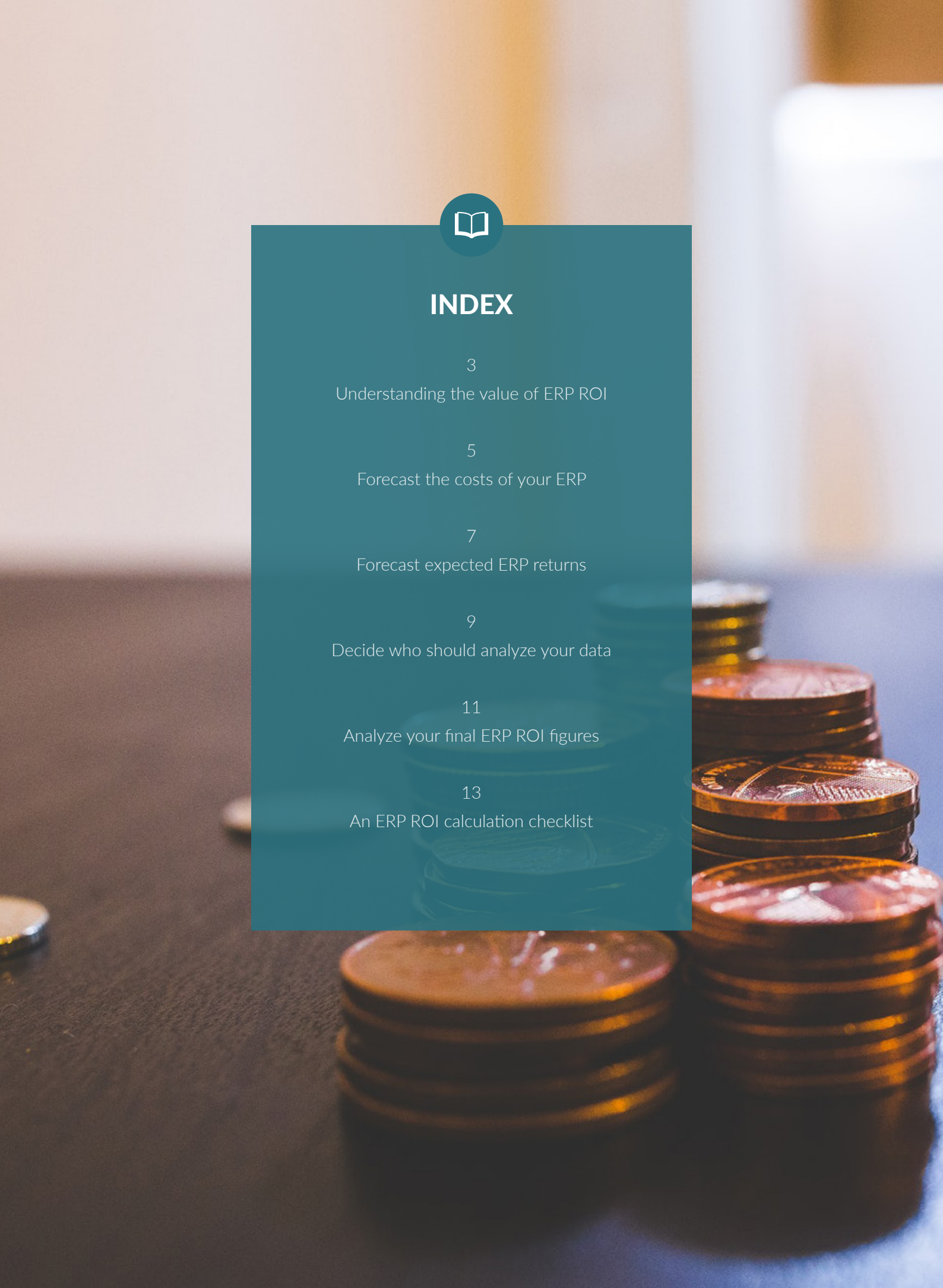
CALCULATING ERP ROI
5 STEPS TO SUCCESS

A step-by-step guide to forecasting the return on your ERP investment

GUIDE HIGHLIGHTS

- How to calculate ERP costs and forecast returns
- Detailed run-throughs of how to analyze ROI figures
- Easy-to-follow ROI calculation checklist



INDEX

UNDERSTANDING THE VALUE OF ERP ROI

The ERP system you use to help manage your business must earn money for your organization.

The ERP system most organizations select must earn an awful lot of money.

If you cannot reasonably predict earnings from your ERP that sufficiently outweigh your system costs, you should probably look for another place to invest your hard-earned cash.

Return on Investment (ROI) is easily the most common method used in business to measure project returns and to compare these with other potential investments. This is a simple metric on the surface; it is calculated by adding up the expected return from an ERP system and then subtracting the expected costs of the ERP. Divide the result by the expected cost and the quotient is your ERP ROI. Generally, the larger the quotient, the better the investment ranks among investment choices.

Yet the reality is that calculating ERP ROI and analyzing the final figures is a complicated process fraught with misconceptions and challenges. That's why we've put together this guide - we'll cover which costs to consider, how to forecast returns as accurately as possible, and totaling it all up to create a realistic ROI figure that you can use to measure your new ERP's success against expectations.

ERP ROI IS FLEXIBLE

ROI can provide a flexible metric to measure ERP project success. This can be an advantage, as different people from different disciplines might define the costs or the returns for an ERP project in their own way.

This flexibility can also be a disadvantage. ERP ROI defined in one way may not be relevant to another department with a different interpretation of costs and returns. The importance of keeping the calculations consistent cannot be overstated.

It is also worth noting that time is not a factor in return on investment. Compare two potential ERP investments, each with a cost of $75,000 and an expected return of $100,000. Both show a 33% ROI and seem to be investments of equal merit. Dig a little deeper and we might learn the entire cost on one project must be paid tomorrow and the return won't be seen until next year. The other has costs spread over the next six months and begins to show returns after the third month with the entire return expected by the end of the year. Clearly, the second choice is the wise investment.

FACTORING TEMPORAL ELEMENTS INTO ROI CALCULATIONS

We can add a temporal element to our ERP ROI calculation using payback period which looks to see how many months it takes to recapture ERP costs. Another more sophisticated metric that captures the value of time is internal rate of return (IRR). Costs in the next month are more expensive than costs in a future period. Gains that begin sooner are more valuable than a gain later. IRR provides a percentage value that looks like the quotient in ERP ROI.

"If you cannot reasonably predict earnings from your ERP that sufficiently outweigh your system costs, you should probably look for another place to spend your money"

A further potential shortfall in the use of ROI is risk. How certain are you of your ERP project costs? The answer to that question will depend heavily on your ERP budget planning and cost forecasting, and how transparent vendors are about their pricing structure. Always keep in mind that even the most accurate ROI is an estimation only, which can be altered by a number of factors outside of your control.

FORECAST THE COSTS OF YOUR ERP

To state the obvious: an accurate ROI depends on a thorough understanding of the costs involved in choosing a new ERP.

Some costs are obvious and will be easy to calculate, while others will take more effort. Many of these costs also require a broad range of business perspectives to estimate accurately. Here are five key areas where accurate cost forecasting is crucial.

OUT-OF-BOX SYSTEM PRICE

The initial cost of the software might seem like an easy one – just look at the vendor's quote.

But first, you must be sure all the additional modules you need are included. Remember "you" includes the whole enterprise. A module or option that finance doesn't even recognize might be the entire system to the quality department. If you are planning a phased-in approach, document all the costs and the time at which each is expected to arise. You might want to look at ROI with all costs included or only the initial costs, but you must match your returns to the costs no matter the time frame.

License fees - on-premise vs SaaS

There are two main deployment models for ERP, and their pricing structure is different.

- **On-premise ERPs** are hosted on your company's own servers and are usually purchased via a large, one-off license fee. The system is then yours to own in perpetuity. Using this model, you may have to update your hardware to ensure the ERP can run on it, which you should also factor into your ROI cost calculations
- **Cloud ERPs** are hosted on third-party servers and accessed via the internet. They are typically priced on a per-user-per-month model for as long as you use the system. You won't need to update your hardware, but remember that the longer you use the system, the more you'll end up paying in monthly user fees. This will impact your final ROI figure.

CONSULTANCY COSTS AND VENDOR IMPLEMENTATION FEES

You will almost certainly need some help from consultants during your ERP project. Even an implementation planned over time using internal resources will utilize external guidance for some

decisions (whether that is in the form of an army of consultants or a paid report).

Consultancy is always in danger of scope creep, so in order to calculate costs, you will need to clearly define the timeframe and extent of consultancy activities prior to the project.

ERP vendors also usually offer a range of other implementation services, including project management, data migration, and system customization. Sometimes these are included in the overall system cost, but some vendors will charge them as an added extra. Be clear on which model your chosen vendor uses.

MAINTENANCE COSTS

Maintenance costs include future upgrades to the ERP and any support agreements you have with your vendor. For a simple ROI, calculate the maintenance costs over the expected life of this ERP or look forward at least seven years.

"Be sure your servers meet and exceed the minimum specifications from the ERP vendor. Aim to meet the optimal specifications"

You will likely need to expand hardware and network systems to get the most value from the ERP system. Be sure your servers meet and exceed the minimum specifications from the ERP vendor. Aim to meet the optimal specifications or you will be including the cost of users waiting for their transactions to 'save'. Look into future hardware costs too. Your ERP will outlast most hardware so add in some replacement and maintenance costs on your hardware and network.

USER COSTS

Your users also incur costs during an ERP project. You plan to train them, don't you? Training takes time. Will you bring in temporary help to make up for this training time or offer overtime pay? Just because some users are on annual salaries and not hourly, there can still be a cost if you provide comp time. Whether the policy is formal or informal those individuals will want their compensation - whether that's overtime pay or time off in lieu.

Another cost to consider is the time taken to become competent in the new ERP. On day one, users will not do their jobs as fast as they do today. Some users will be up to speed in a few days and others will take weeks. Task frequency and length should be factored into these costs. The monthly closing process in finance is one example. An annual marketing campaign is another. Your costs should allow some efficiency reductions during the first few runs of each ERP process.

This is by no means a comprehensive list of ERP ROI costs, but it gives you a sense of the context and detail required to accurately calculate or predict costs. It is not as simple as looking at the price tag.

FORECAST EXPECTED ERP RETURNS

Returns – they are the reason you are looking for an ERP system. In a nutshell: how will your ERP save you money? How much will it improve your revenue or reduce your expenses?

These questions can be answered by conducting a thorough analysis of the input variables for an ERP ROI calculation.

ASSIGNING RETURNS TO REQUIREMENTS

Much of this exercise should already be done. When you began considering a new ERP you got together with managers, users, and executives from around your enterprise to collect and document the reasons why you needed the tools present in ERP. Go back and get your notebook. Dust it off. Start placing monetary values next to each requirement.

Did a potential customer influence your decision to upgrade ERP? What products and what volume do you think that customer will order now you are armed with the new system? What is the incremental margin? Those products have related cost of sales but many of your indirect expenses will remain unchanged. You must carefully separate these from your costs to accurately calculate ERP ROI returns.

What other benefits do you see? Will you be able to produce the same products faster? Does that mean more potential revenue or a chance to drastically reduce overtime costs?

FORECASTING POTENTIAL RETURNS

Did you predict you could bring the same materials through your supply chain with two fewer buyers? Just add up the salary and benefits those buyers were paid.

However, there is a catch many companies fall into. Unless you actually eliminate those two people from your payroll, you haven't saved anything yet. Keeping the same number of buyers as you had before the ERP would only mean the work will expand to fill the time available.

"During the calculation of ERP ROI, you will probably identify returns you never expected to find, especially after you begin using the new system."

Another source of return could be revenue protection. Perhaps your quality system was paper-

based and held together by one person who is near retirement. The new ERP has all the quality tools you need built-in and available to any user who needs access. More importantly, the system can be available to customers who demand to see your documentation and to agencies that are concerned with your level of compliance.

Many businesses are profitable at the bottom line. Their finance department spreads costs among products and processes using a variety of metrics. But that is as close to accurate as you are able to get. Your new ERP could eliminate uncertainty through a much more detailed project costing component that is included. Maybe the overall cost remains unchanged but because you are able to link costs precisely to products you can view profitability in a much smarter way.

While calculating ERP ROI, you will probably identify returns you never expected to find, especially after you begin using the new system. The most important step in the ERP ROI process is assessing the balance of costs versus returns. Without accurate data going into this funnel, you will get nothing of value at the other end.

DECIDE WHO SHOULD ANALYZE YOUR DATA

The process of calculating ERP ROI will usually start with the goals you set for your ERP project. Your thought leadership team met several times and you have goals from several disciplines – right?

Those goals are the reason for evaluating an ERP using an ROI calculation. By now, you have determined the costs and returns associated with these goals.

Now it's time to connect the dots. First though, you'll need to put together a team capable of analyzing the cost and return figures that you estimated.

LIAISING WITH KEY PROJECT STAKEHOLDERS

Let's say you expect to reduce inventory and free up working capital. People from finance and materials will work together on this type of goal and the corresponding ERP ROI calculations.

Which component parts and how many of each will you reduce from inventory? Will there be any negative effect on deliveries from a reduction in inventory?

In this case, an ERP ROI calculation will only be valid if any negatives such as lost sales from the reduction count as a cost against ROI. This information is only available if the right departments provide input for the calculations.

You may hope to win more profitable customers with a new-found ability to improve throughput. Look carefully at returns and costs linked to this goal and include all the relevant departments in the final calculations. Sales experts should detail the SKU that customers might order and the margin on that item. Operations should check the other side to ensure the costs expected are reasonable and that capacity will be available. Operations might also see other gains if throughput improves significantly. Could overtime expense be reduced? Could they eliminate the graveyard shift? These possibilities would yield even more returns than sales would have predicted in their own ROI calculation.

To sum up: your ROI figure will only be representative of real-world costs if you consult with experienced personnel across the company.

GET YOUR ANALYSTS ON BOARD

Analysts from finance should coordinate all estimates of costs and returns. They already have the necessary skills, and centering the analysis within a core group of analysts ensures methods are consistent. All departments will have some bias that can affect the ROI process. Your analysts may have their own bias, but it is their job to ensure these are eliminated during the calculation of ERP ROI.

These financial analysts should also be forecasting ROI for other potential investments. While ERP is important, there are other ways to spend money that might earn even more than ERP. Again, by having all the analyses performed in the same manner, by the same team, all those potential investments can be lined up and compared by a common metric.

THE FINAL FIGURE

"Nothing will derail the choice of ERP faster than discovering the ERP ROI assumptions are inconsistent with assumptions made on other project calculations."

C-level will insist on accuracy. Nothing will derail the choice of ERP faster than discovering the ERP ROI assumptions are inconsistent with assumptions made on other project calculations. If there is any uncertainty, overestimate costs and underestimate returns.

ROI is unlikely to be the only metric used to make an ERP selection decision. A poor ROI is a great way of eliminating potentially poor-performing systems. Once you've identified which potential ERP systems are likely to offer a good ROI, you should examine them in further detail.

What is the probability any change will be as estimated? For example, If you project that a new ERP will reduce staff by four to six employees, what is the probability actual staff reductions will fall outside this range? As well as probing forecasts further, the timing of costs and returns will also be reviewed during the final project selection phase.

ANALYZE YOUR FINAL ERP ROI FIGURES

By now you have completed most of the hard work involved in calculating ERP ROI. You have a good estimate of your costs and returns for the ERP system. You and your team have examined the factors and agree that the numbers are as accurate as you can get them. You have shared those numbers with people throughout your enterprise as communication is a crucial part of ERP projects.

All you have to do now is plug the numbers into the simple ROI formula and see if the answer is positive. ROI = (returns minus costs) divided by costs. Show the quotient as a percentage. If it is positive, you have an expected gain and if it is negative, an expected loss.

You're still not quite finished though. Don't forget to complete these final steps before calling your ROI calculation complete:

PROMOTE ERP AS A WISE INVESTMENT CHOICE

As discussed, the proposed ERP project is probably not the only opportunity to invest the company's money. Production might be looking at a new automated assembly line. The marketing department might want more product innovations in the next major release. The individuals in the supply chain group want some new software of their own. Meanwhile, the finance department warns that the money pit is not bottomless.

Here is where the power of analyzing ERP ROI comes into play. Perform the same analysis on returns and costs for other potential investments. Wherever possible, use the same practices to ensure the calculations are consistent. Now take a look. If ERP shows 32%, while the factory automation system yields 28%, it looks like the choice is made.

DELVE FURTHER INTO POSITIVE ROI FIGURES

Your analysis shouldn't stop there though; despite its complex inputs, ERP ROI is a simple calculation and has the most value as a first-pass metric. If the ROI for your ERP system was negative, your consideration would probably be over. But there are also qualitative or indirect factors to consider, many of which are not part of the direct input for ROI, rather they provide a contextual backdrop for your final ROI figures.

"ROI analysis is also the time to bring risk factors and timing of the costs and returns into play."

The size of the required investment is a perfect example of these contextual inputs. If you only have $500K, any potential investment above that amount should be removed from consideration regardless of the ROI. After all, over-investing will lead to dramatically increasing costs over time and render the initial ROI calculation void.

ROI analysis is also the time to bring risk factors and timing of the costs and returns into play. These analyses are more complex than ROI but you have reduced the list of potential investments competing with ERP to only a few, so the workload should also be reduced. Take the time to analyze ERP ROI in the context of return schedules and cost risks. If that ERP system is still the best choice after these analyses, it is time to start your ERP selection search.

AN ERP ROI CALCULATION CHECKLIST

Use this template as a starting point to forecasting an ROI for your ERP project. While the costs and returns listed here are fairly comprehensive, each company is slightly different, so don't forget to adjust this to your particular needs.

COMPILE ERP COSTS

- ◯ Out-of-box price
  - ◯ Total number of licenses required: ____
  - ◯ On-premise per-user license fee: $____
  - ◯ SaaS per user/month license fee: $____

Total: (number of licenses) x (on-premise OR SaaS license fee) = $____ (per month if SaaS)

- ◯ Implementation costs
  - ◯ Consultancy fees: $____
  - ◯ Customization fees: $____
  - ◯ Staff training: $____
  - ◯ Data migration: $____
  - ◯ Project management: $____
  - ◯ **Total: $____**
- ◯ Staff costs
  - ◯ Staff overtime during implementation: $____
  - ◯ Cost of temporary staff during implementation: $____
  - ◯ Cost of reduced efficiency: $____
  - ◯ **Total: $____**
- ◯ Maintenance costs:
  - ◯ Cost of vendor support package: $____
  - ◯ Cost of system upgrades: $____
  - ◯ Cost of hardware replacement for on-premise ERP (if applicable): $____
  - ◯ **Total: $____**

Total costs: out-of-box price + implementation + staff + maintenance = $____

FORECAST ERP RETURNS

- ○ Increase in production efficiency: $____
- ○ Increase in distribution efficiency: $____
- ○ Increase in inventory efficiency: $____
- ○ Increase in order volume: $____
- ○ Decrease in number of staff required: $____
- ○ Decrease in human errors: $____
- ○ (Add your own forecasted returns here): $____
- ○ **Total: $____**

Initial ROI figure = total returns ($____) / total costs ($____) = $____

ANALYZE INITIAL FIGURES

- ○ Check forecasted returns with key department stakeholders
- ○ Check cost and return figures with finance department analysts
- ○ Calculate time for:
  - ○ ERP investment to break even
  - ○ ERP investment to become profitable

Adjusted ROI figure = total returns ($____) / total costs ($____) = $____ over ____ months

This guide was written by Tom Miller, ERP Focus Columnist, with contributions from Kathryn Beeson, ERP Focus Editor

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