



February 2007

Document C41

## RESEARCH NOTE QUANTIFYING RETURNS FROM INCREASED PRODUCTIVITY

### THE BOTTOM LINE

**When productivity returns from IT are measured, time saved does not equal additional time worked. Using a correction factor to account for the inefficient transfer of time allows accurate and structured quantification of returns from increased productivity.**

Much of the technology being deployed today impacts worker productivity — but managers are reluctant to count productivity gains in ROI because they know worker time saved does not equal additional time worked. The failure of knowledge management and customer relationship management solutions with lots of “soft” benefits but few hard ones to deliver on their promises have made many wary of counting indirect benefits when looking at the returns from technology. That is a mistake: the problems lie not in the benefits but in the way they’ve been counted.

Using a structured methodology to evaluate returns from employee productivity enables you to quantify the impact on productivity a new solution will have, ensure any cost-benefit technology analysis you undertake accurately reflects the impact of employee productivity, and — for the skeptics — judge the sensitivity of your ROI measure on productivity gains.

If you expect your technology deployment will enable you to reduce or redeploy personnel, great: your personnel savings are a direct benefit. You can count the fully loaded cost of those redeployed or reduced employees as direct returns on your investment on an ongoing (yearly) basis. If you don’t expect your technology deployment will enable a reduction in staff, you may find other indirect benefits such as reducing the time needed to test new software, develop marketing literature, or answer customer requests. Those can be quantified as well.

### GETTING STARTED

To begin to quantify the returns from an increase in productivity, you must first determine how much time you expect employees to save because of the new technology. For example, if you estimate 1000 employees will save 10 minutes per year, that’s 166.6 hours per year. Many decision makers would not count this savings — because they know time savings doesn’t always translate into increased productivity. They are right. Let’s face it, employees are human — and based on their motivation, position, management, and job satisfaction, they will work more or less if given the opportunity to do so.

**RELATED RESEARCH**

- E19 Indirect benefits -  
The invisible ROI  
drivers
- D26 Lies, Damn Lies, and  
Average ROI
- C51 Manifesto:  
Separating ROI fact  
from fiction.
- C41 Quantifying  
productivity returns
- A21 The strengths and  
weaknesses of TCO
- A11 Payback and Risk
- A10 Maximizing ROI
- A4 Human factors and  
ROI

Nucleus has defined that reality as the following:

**Inefficient transfer of time™** — the phenomenon in which time saved by employees does not amount to an equal increase in time worked.

To account for the inefficient transfer of time, Nucleus has developed a database of productivity correction factors.

**Productivity correction factor™** — A number less than 1 and more than 0 that is used to correct the estimate of time saved to account for the inefficient transfer of time.

Multiplying the time saved times the correction factor enables you to quantify the actual returns from increased productivity to your organization. In its exploration of thousands of technology deployments over the past decade, Nucleus Research has developed a database of correction factors based on employee location, role, and motivation. Following are a few general examples:

- Sales representatives. Often highly commissioned and highly motivated to use saved time for additional work, sales representatives (depending on location and level) are likely to require a correction factor of .7 to .9.
- Line workers. If all the workers on a line save the same amount of time and the foreman or line manager is watching, you can expect a correction factor of near 1.
- Marketing personnel. Depending on the size of the organization and their position, marketing personnel are less likely to use time saved effectively (they may instead use the time to update their resume, review new Web sites, or pursue other non-work activities — making a correction factor of .5 or less not unusual.

If you're not certain about the correction factor to apply, you can use .5 as an average or a more conservative measure. You can also perform the ROI analysis with different correction factors for sensitivity analysis into how important a role indirect benefits play in the total ROI of your project.

**CORROBORATE YOUR FINDINGS**

Once you've estimated time savings and used a correction factor to account for the inefficient transfer of time, you should go back to the project and look for a corroborating measurement. For example, if you estimate the legal department is saving 10 percent of its lawyers' time, you should reasonably expect one of the following:

- The company will fire or redeploy 10 percent of its lawyers.
- The growth in legal work the department does will grow by 10 percent.
- The lawyers are 10 percent more productive.

Going back and corroborating your productivity gains enables you to refine your correction factors and thus your ROI measurements — making future ROI calculations more accurate.

**PUT IT ALL TOGETHER**

Using correction factors to account for the inefficient transfer of time, you can accurately quantify the expected returns an increase in productivity will deliver to

your company — and compare productivity gains in a clear structured way across teams, programs, and projects. Following are a few other key points to remember:

- Don't double-count. An increase in sales force productivity should lead to an increase in profits on revenues, so you shouldn't count both. It's always better to measure and count direct benefits (such as profits) rather than indirect.
- Use the fully loaded cost of an employee. The costs or returns of an employee to the organization should always be measured in terms of their fully loaded cost; that is, the total cost of the employee (including overhead and benefits) to the company. If you're not sure of the fully loaded cost, salary plus 35 percent is a good starting point.
- Don't forget the costs. Will employees spend a week out of work learning the new technology? Will they lose a day or two as the old system is updated? If you're going to count productivity impact, you have to do it on both sides, so take account of employee time lost associated with rolling out a new solution as well.

### **CONCLUSION**

Productivity is a key reason for deploying new technology today, but to accurately measure the productivity-based returns from technology you need to have a structured, clear approach. Using correction factors that reflect employees' position, motivation, and level of supervision and gathering corroborating evidence to support your calculations will ensure accurate estimation of the returns from productivity.

*Nucleus Research is a global provider of investigative technology research and advisory services. Building on its unique ROI case study approach, for nearly a decade Nucleus Research has delivered insight and analysis on the true value of technology and strategies for maximizing current investments and exploiting new technology opportunities. For more information or a list of services, visit [NucleusResearch.com](http://NucleusResearch.com), call +1-781-416-2900, or e-mail [info@NucleusResearch.com](mailto:info@NucleusResearch.com).*