



# Global Information Assurance Certification Paper

Copyright SANS Institute  
Author Retains Full Rights

This paper is taken from the GIAC directory of certified professionals. Reposting is not permitted without express written permission.

## Interested in learning more?

Check out the list of upcoming events offering  
"Security Leadership Essentials for Managers (Cybersecurity Leadership 512)"  
at <http://www.giac.org/registration/gslc>

# Building and Maintaining a “Certifiable” Workforce

## *GIAC (GSLC) Gold Certification*

Author: Robert J. Mavretich, [bmav@rocketmail.com](mailto:bmav@rocketmail.com)

Advisor: Stephen Northcutt

Accepted: July 2013

### **Abstract**

By leveraging widely accepted and respected industry certifications and developing a solid training program to assist in obtaining them, employers can ensure that their staff is appropriately educated and continually motivated towards meeting and exceeding company goals. This program can also be used as a retention tool for current and future employees by highlighting it as part of the employee compensation and benefit package, and providing advancement and/or incentives based on completion of certification classes/approved certifications. Within the information technology profession, this has a huge ancillary benefit of strengthening the information security community as a whole through more effective knowledge gain.

# 1. Introduction

When picking up a newspaper or reading an online journal, (CNN, Fox, WSJ, New York Times, etc.) it is hard to escape the unemployment statistics both domestically and internationally. Large amounts of the world's population, especially youth are either severely underemployed or unemployed. In Spain alone, "the unemployment rate for those between the ages of 16 and 24 has soared to 57.22 percent..." (Homs, 2013). Many economists have written in these publications about future generations with dim employment prospects ahead, but looking closer one can see another theme running counter to these unemployment reports: a lack of qualified employees for thousands of job openings.

"It is becoming a common complaint among CEOs and other top corporate executives: They can't find enough skilled workers. One economist recently told Fortune he has job openings in the hot area of data analytics that have gone unfilled for six months or more. A multinational CEO earlier this year said he is desperate to hire manufacturing workers--if they have the right training. These executives' frustrations are reflected in the results of a new study by McKinsey and Co. that shows that only 42% of employers believe new graduates in the workforce are adequately prepared by their colleges or other pre-employment training programs. Recent graduates know they're ill trained: The same study finds that 45% of youth think they're prepared for their jobs" (Mehta, 2012).

As the cost of education has steadily risen over the past decade, this is an alarming trend. How can students be paying more for an education, yet fail to land a job upon graduation? Weren't those graduates with college degrees supposed to be more employable and make more money over the course of a career than someone with just a high school degree? This paradigm shift was very evident in Japan during the 1990's recession. "It was at this point that the conveyor belt of good school grades leading to

Robert J. Mavretich, bmav@rocketmail.com

good university places leading to jobs-for-life broke down. A generation of Japanese were faced with the insecurity of short-term, part-time work. And it came with stigma, not sympathy” (Kremer and Hammond, 2013). In a bizarre twist of poor timing combined with recent economic contraction, a recent graduate from a solid university program may find themselves on the same unemployment line as an individual with a high school degree.

It is very evident that over our relatively short history, individuals are resistant to change despite the fact that we are constantly evolving. Our standard of living has increased significantly in the last century, and was made possible by innovations such as the internal combustion engine. The Industrial Revolution started the process by which we utilized machines to enable rapid communication, commerce, and transportation across the globe, and we have been reaching new heights ever since with the Internet boom being the latest “game changing” example.

This resulted in the creation of millions of jobs and building of infrastructure to support this massive change; however as of late, this job momentum has fizzled. “But a stagnant labor pool could be good news for workers -- especially workers who can't be replaced by overseas labor and machines. If economics is the dismal science, demographics have been the dismal math for the United States recently. But we're in a unique trough today. In the next 15 years, as Boomers spend their savings and Millennials borrow for their future, the American worker could get something that has been all too scarce in the last few years -- an assist from Father Time” (Sen, 2013). There may be a paradigm shift coming in not only business practices, but also business strategy and it involves a healthy dose of patience. This is an incredibly tough situation for those who wish to leave the workforce but need to stay a few more years to recover savings losses, and those who wish to enter the workforce so that they may start saving for their future.

Robert J. Mavretich, bmav@rocketmail.com

During the financial crisis beginning in 2008, the information technology industry (along with almost all other industries) experienced a rationalization that saw venerable companies abruptly out of business and their employees out of jobs. Consider companies such as Bear Stearns in 2008, as well as Enron and Arthur Andersen in early 2001 that were forced to lay off their entire workforce in extremely condensed timeframes. There were little to no opportunities for those employees to update their resume and engage career services for assistance in looking for positions inside or outside of the firm. Despite decades of service, some individuals had allowed their specific skill sets, and ability to learn and adapt to change, calcify and dry up along with their prospects in a suddenly very tight job market. “The embrace of a multicareer work life is perhaps the most striking difference between Gen Y and older folks” (Velshi, 2012). As a result, today’s worker will likely go through at least one major career change due to the upheaval that started within the job market over the last decade and will likely continue.

While it is the employee’s responsibility to keep their skill sets and resume updated, appropriate guidance is a necessity. A partnership between employees and employers to implement solid training programs will help to even out those unemployment troughs for willing workers to fill those positions of the future. Using the aforementioned companies as an example shows that the future may come sooner than one thinks, so it is best for both employee and employer to always be prepared.

## 2. Building and maintaining your training program

### 2.1 Building the Program

There are a few actions that every employer can take to affirm the importance of their training program and continually guide it. They can be summarized as follows, as well as be calibrated appropriately for specific organizations.

1. Announce the training initiative to employees;
2. Assess existing and desired skill sets in order to match employees with the right training;
3. Research appropriate training delivery methods (in-house, university, community college, SANS, etc.);
4. Develop plans with employee input;
5. Set “Terms and Conditions” of training and post-training expectations.

#### *Announce training initiative to employees*

Providing training initiatives to employees should be the first and most important step in the process of building a solid and beneficial program. Overall, there should be top level management support for a company-wide training strategy to be as inclusive as possible and not appear to favor one area over the other. Some organizations (and most in the large and medium sized business category should) have a dedicated training department. If not, a manager can still take it upon themselves to develop training plans for the team that they are leading.

In addition, management can announce that they will be establishing times to meet with their employees to discuss their training plans for the year. Once that occurs, individual meetings can be scheduled (perhaps as part of regularly scheduled one on one manager/subordinate meetings). Employees should be encouraged to think about the

Robert J. Mavretich, [bmav@rocketmail.com](mailto:bmav@rocketmail.com)

daily tasks that they perform and have some suggestions for directing their own training. This may be very insightful for a manager to get a preliminary idea of employee self awareness and how they apply their current skill set.

Finally, Human Resources can be a great asset in tracking all of this information whether it is part of a large scale, corporately purchased Learning Management System (LMS) or a small department within a small business. They can advise on the best way to approach employees, handle documentation, and provide historical record keeping. If the training is directly related to regulatory mandates, such as OSHA, they can also be the audit point on behalf of the company. The Human Resources department may also have a wealth of skills assessment tools, handouts, training plan templates, etc., so that it is not necessary to re-invent the wheel when formulating your strategy and putting it into action.

### ***Assess existing and desired skills in order to match employees with the right training***

Even though an employee may have been hired to perform a specific job, responsibilities may change materially over the course of a few years. It is important managers are aware of the capabilities of their employees. If the position requires the use of advanced math, then someone with a GED may not be the best choice. However, despite some employee's lack of a college degree, they may actually be better at absorbing key information and acting on it than those who received a college degree. Bill Gates is constantly at the top of the richest individuals in the world list, yet is also a college drop out. "A college graduate will earn an average of \$2.3 million over the course of a working life — \$1 million more than the lifetime earnings of someone with just a high school diploma, according to data from the Center on Education and the Workforce at Georgetown University in Washington, D.C." (Fitzgerald, 2012). Bill Gates' ability to effectively articulate and execute his vision for Microsoft has certainly changed all of our

Robert J. Mavretich, bmav@rocketmail.com

lives. Despite not having a college degree, he emphatically supports higher education through his charity as one of the tools to improve lives across the world.

Assessing skills may not always result in a quantitative number, as many companies try to measure by, but rather a qualitative picture. Getting to know employees on a personal level is something that will likely lead to making better judgment calls on their behalf as it relates to their daily work. Many employees within IT for example, do not necessarily have Computer Science degrees. They may come from the fields of Marketing, Accounting, or English and may also have leveraged online programs for their degree as opposed to spending four years within a university setting. Consider asking employees with a marketing degree to assist in preparing executive presentations, and then assist in the delivery of them to senior management. Employees with accounting degrees may be invaluable in internal budgeting discussions as well as external vendor contract negotiations. Regardless, employee's knowledge is always complemented by an ability to effectively communicate through the written and spoken word.

Managers who take the time to mine for the intangible data will see their team and their company goals met more frequently and likely with a higher level of engagement and success, than if they choose to ignore these valuable “nuggets” of information. “In the large impersonal workplace of today's metropolitan environment it has become easy to objectify the human being as a commodity” (Northcutt, 2012). Ignoring opportunities to glean motivational information in a somewhat less formal environment potentially signals to employees that a company only values profits and not personnel, which can have negative repercussions for the business and its success.

Robert J. Mavretich, [bmav@rocketmail.com](mailto:bmav@rocketmail.com)

***Research appropriate training delivery methods (in-house, university, community college, SANS, etc.)***

Training opportunities abound for those interested. While most IT professionals are very interested in keeping up with the latest in technological advancement on a specific platform, upper management may not be. In order to provide those in senior management with information that they can quickly disseminate to other high ranking individuals within the company, lower level employees must be able to speak to senior management. They have higher priorities that extend beyond being able to configure switches and routers or calibrating machinery; most notably securing and satisfying customers to ensure that frontline employees can keep configuring routers and calibrating machinery. Senior management does not need to keep up with machine code or other programming languages; employees need to become competent in theirs. These soft skills will allow lower level employees to convey the importance of what is done on a daily basis and how it brings value to the company to senior level executives.

One important caveat to note: this soft skill training needs to be calibrated periodically to determine whether or not it is effective. One good example is utilizing organizations like Toastmaster's ([www.toastmasters.org](http://www.toastmasters.org)) to hone public speaking skills. These sessions usually require multiple speeches on varying topics (designed to deliberately get timid speakers out of any comfort zone) and have peers grade different things (one person keeps tracks of how many times “umm” and other speech killers, are said) to provide a clear picture of where improvement needs to occur. Simply being forced to speak in team meetings or in front of people is hardly an effective platform for this important career development aspect, as there is no feedback loop with which to measure performance. Technical training is easier to implement, as the industry will keep it updated as products evolve. Because of the natural progression of technology and the skill sets necessary to stay current, it should make it easier than soft skill training to determine applicability and timeliness.

Robert J. Mavretich, [bmav@rocketmail.com](mailto:bmav@rocketmail.com)

Some organizations are too small to have a robust training department but can actually be effective in developing their own targeted training by creating it themselves. “Technology-based training and e-learning enable companies to scale and create consistent digital trainings to be performed by their best trainers. These e-learning modules make it easy for employees to watch, interact with, and test their skills without leaving their desk. Companies everywhere want to take advantage of these modules, but most companies, especially smaller ones, find that building a learning management system (LMS) is too expensive” (Griffin, 2011). It might be possible to hire a few developers on a contract basis or have a developer or two on staff already who can assist with this. Perhaps the required training is available on YouTube or another free (or inexpensive) platform. Code Academy is a good example of free technical training available to introduce coding (CodeAcademy.com), and even MIT has published various courses on the Internet that are publicly available, free of charge (<http://ocw.mit.edu/index.htm>).

Recently, community colleges and university programs have begun collaborating with local and national businesses to ensure that they are graduating students with the necessary skill sets. “Derek Stine graduated from Hagerstown Community College last year with a web and multimedia technology degree, and landed a job at D’Vinci Interactive after interning at the web services firm. D’Vinci has a close relationship with the Maryland-based college, having started at Hagerstown Technical Innovation Center, a business incubator. When Stine wanted to get some on-the-job experience, Hagerstown’s internship coordinator helped set him up at D’Vinci. The company hired him as a result of the internship. ‘It’s good for both the company and the person to have a period to judge the fit and make sure it’s a good one,’ Stine said” (Luhbi, 2011). If extensive research is performed for applicability, community colleges and for-profit schools can be a wonderful way to develop or augment the skills that employees need in order to be successful in their positions. It can also ensure success for a training program and the company overall.

Robert J. Mavretich, [bmav@rocketmail.com](mailto:bmav@rocketmail.com)

### ***Develop plans with employee input***

Speaking with employees and getting to know a little about their employment history and desires for career growth can help paint a more accurate picture of where they can excel. This is important if a manager is interested in sending them for a week's worth of training that they will find informative and be able to apply once they return to the workplace. This is especially important as the workforce increasingly takes on the newest generation of workers. They may have little experience in the areas that is in acute need of being filled, but obviously have tremendous potential to add value to the company.

“Author Neil Howe, who coined the term ‘Millennials’ says that this is a function of neither their age nor their appetite for risk, which Howe believes is less than you might think. Rather, he says, it's because the seismic economic shifts that were occurring just as this group entered the workforce changed the rules. This is the most educated bunch in history, and they expect they'll require more in the future. Howe says Millennials understand the economy handed them lemons, so they're developing skills to make career lemonade. Credentialed training is very important, Howe says, partly because it is portable but also because it gives legitimacy within their organization” (Velshi, 2012).

While some organizations may be hesitant to invest in these workers individually because of the possibility that they may leave, it actually underscores the importance of developing a solid training juggernaut. This allows a company the ability to plug in different employees due to promotion or attrition, or a repeat visit of the same employee after a few years of performing the same job if the job itself has changed materially.

The example picture below shows a very basic training plan that nonetheless covers the basic questions that a manager would need to answer in conjunction with employee's input. The most important question on the example plan is “Business Need Solved: How will the training help my company?” and if it can be answered in a compelling manner, the concerns of time line, which represents time away from the

Robert J. Mavretich, bmav@rocketmail.com

employee work duties, and cost should be easier to present to senior management who control training budgets, especially in a climate of decreased revenue and profits.

Within information technology, customer service, or manufacturing disciplines it may be difficult to remove these people from the “front lines.” However, this becomes a dangerous excuse if staff can’t keep up with the advancements in their field in order to perform their jobs. Employee morale and productivity can actually be reversed if they can never take time to update their training. A company may lose customers as a result. Keep the business requirements in sight and constantly reference against them as a guidepost.

Sample Training Plan					
Training Plan for XYZ, Inc. – Company Wide Plan – Jan. 2003					
Proposed Training What Training Is Needed?	Business Need Solved How will the training help my company? (Trainees will be able to?)	Trainer	Time Line	Number of Employees to be Trained	Cost of Training
<b>Introduction to Work Environment and Machine Cross Training</b> Cross training for all new hires.	Hire 20 new machine operators and have productive as current operators within 120 days.	In-house	Sept – Dec, 2003	20 machine operators 5 supervisors	\$9,000
<b>PC Training in MS Outlook/ Office Suite</b> Classroom training for all new users.	Upgrade company to Outlook /MS Office Suite Benefit – Stay current/ software easier to use and maintain	ABC Computer Company	Jan – Feb	10 supervisors 10 support staff	\$2,000

Retrieved from <http://www.docstoc.com/docs/4960189/Sample-Training-Plan---DOC>

Robert J. Mavretich, [bmav@rocketmail.com](mailto:bmav@rocketmail.com)

### ***Set “Terms and Conditions” of training and expectations afterwards***

Regardless of where the training occurs, the expectation should be set up front with employees that they should be learning something of value to further the company goals. If an employee runs a penetration test, maybe they should go to a penetration testing class to make sure current skills are up to date. For an IT Auditor, perhaps an auditing class would be beneficial to learn auditing on newer versions of common platforms. If a manager wants to really strengthen the overall IT team, send the IT auditor to penetration testing class and the penetration tester to auditing class. “Most organizations do not really get the most out of their training dollars. If you pay for an employee conference or college course, there should be objectives, an understanding of the fundamental skill they are going to learn and what it does for the organization” (Northcutt, 2012). Employees should have the goal to distill what they learned at their training/conference into a few PowerPoint slides and present to the entire team. This will be a great opportunity for them to leverage those Toastmaster skills when they return to the office, and speak extensively on a topic others may know little about.

The manager can grade the presentation in relation to the advertised training goals to determine if it was worthwhile and whether or not the employee takes it seriously enough to continue along the intended path. For example, did the employee just copy the training blurb for their presentation? Or did they enjoy the training, do some additional research to tailor it further to business processes, and bring back a few “nuggets” of good information that can typically only be garnered from attendance at said conference?

Some of these training classes will also provide a certification to prove that the competencies learned in the class were effectively absorbed by the employee. To ensure that the employee has the chance to distill the information (training can be like drinking from a waterfall at times) that they have learned, employers should support the employee’s pursuit of that related certification. While the “train to the test” methodology is unfortunately quite popular, it does little to provide long term benefits. If cramming, performing a brain dump during the exam, and then not being able to articulate what it

Robert J. Mavretich, bmav@rocketmail.com

was that was learned is the end result, it will become evident when those skills become necessary to implement and the employee cannot perform those skills.

The benefit of applying for a certification should be to prove an overall competency, not memorization skills from the last cram session. Employees should be allowed the time to put into effect the training principles, and be comfortable enough with it that they “own” the process or information. The certification should be an event whereby the employee has proven that the training stuck. Signing up for the certification after a determined period of time from the training/conference completion should be encouraged, as it may help the employee focus on recalling some of the information that is important, but not yet utilized specifically. This will benefit the employee by helping to focus their minds on what was learned, and give the employer confidence that information can be retained and recalled at a later time for use in service of the company.

In order to make these certification exams a possibility, employers should be able to allocate some time for their employees to review their training materials while on the job. While some employers may think this is counter-intuitive they should realize that learning is a continuous process, and the accretive benefits to the company can be quite substantial. If it is difficult to take people “off the line”, encourage a study group at lunch or after work. “Regardless of topic, brown bag lunches, or lunch and learns, enhance employee development and their commitment to your business” (Heathfield, n.d.). Even if it means sponsoring that study group by buying the pizza and refreshments, it is a small price to pay that can provide outsized dividends.

## 2.2 Maintaining the Program

Similar to building the program, there are also a few things that every employer can do to affirm the importance of their training program and continually guide and maintain it. They can be summarized as follows, and can be modified if necessary:

1. Guiding employees towards the most appropriate training;
2. Collaborate with employees and forecast as part of employee goals;
3. Budget for a slight increase in training budget every year (1-2%);
4. Recognize, reward, and repeat; incentives for training completion;
5. Provide advancement (positional and/or financial) to solidify retention and ROI.

### *Guiding employees towards the most appropriate training*

Staying current with the best training available in the market is a difficult task. Over the last few years, there have been many articles written in major publications regarding the amount of debt students have taken on in non-traditional school settings in order to advance their careers. “Many nontraditional students are drawn toward for-profit schools, which can offer great flexibility in scheduling and time frame, but where on average they will take longer to graduate and end up with more debt and lower post-graduate employment and salaries than students at more traditional institutions” (Christian, 2012).

From those articles, it does not state, but would seem to imply, that these students quite possibly did not conduct any detailed research on the career prospects, current responsibilities of students who recently graduated, compensation, and other key factors that go into this type of decision. If their employer had been involved and was able to guide them more effectively, this might be less of a public policy issue than it is today with record number of student loans being granted and subsequently falling into default.

In some companies, employees can get financial assistance to further their

Robert J. Mavretich, bmav@rocketmail.com

education either through scholarships, training dollars allocated to each employee per year, or partnerships whereby the company allows the employee to take time for their training without counting it towards their vacation bank, or pays for the airfare and hotel while the employee picks up the training class. “The organization’s HR group needs to understand the ‘hot skills’ (new skills needed to take advantage of changes within their industry) and critical certifications which demonstrate employees have mastered these skills, and to coach managers on future needs” (Northcutt, 2012). The caveat here is that in most situations, an employer is very hesitant to provide overall career advice, and simply provides linear guidance as it applies to that individual’s job and job duties.

In the case of hot skills and future needs, for-profit schools can be a huge advantage to employees and employers as they typically focus on certain disciplines and fill a specific need articulated by business drivers. “At Hagerstown, local employers such as D’Vinci serve on career advisory committees, which focus on curriculum issues in fields like engineering, biotechnology and nursing. Nowadays, the committees meet more frequently and the curriculums are updated annually in many cases. The school wants to make sure it’s not graduating students with useless skills, said Guy Altieri, the college’s president” (Luhbi, 2011). This is a great feedback loop for all involved because it matches curriculum with current business needs. Students learn the current business practices within their chosen field while increasing their employment prospects.

### ***Collaborate with employees and forecast training as part of employee goals***

As this training should no doubt expose employees to others in the industry and the good ideas that can be fostered in those environments, this should be highlighted on employee’s goals and performance management as an overall positive. Special consideration should be given to the employee if they have shown that the training directly impacted their performance or positively impacted company goals. The benefit to the manager is potentially having a team of “Swiss Army knives” that they can plug in to

Robert J. Mavretich, bmav@rocketmail.com

different roles because of the breadth of their knowledge across multiple domains. It is also impossible to know in advance when labor conditions will deteriorate to the point where it affects your company deliverable.

Job training, job sharing, “be the boss for a day”, and other different ways of collaboration can teach the necessary skills the team will need to be productive in their current jobs and equip them to effectively move to increasing levels of responsibilities. “The Hawthorne effect posits that productivity tends to increase when workers believe that their bosses are showing a greater interest and involvement in their work” Goldsmith (2007). Collaboration with employees will ensure that they know management is invested in their success, even if it also means they think they are being watched. Staying on top of trends and business drivers should also make the job of forecasting training less of a reactive action, and more of a deliberate process that is capable of anticipating business needs.

***Budget for a slight increase in training budget every year (1-2%)***

This is admittedly a tough proposition, especially as the economy has contracted and consumer spending has affected the bottom lines of company budgets. However, as most managers will attest to, if a training line item isn’t maintained within the budget, it will likely disappear. “...the IT department’s budget should include a dollar figure for each employee that is earmarked for outside professional development and/or technical training” (Northcutt, 2012). By encouraging employees to take the training that is available to them, it should be easier to accurately forecast training dollars year over year, and avoid the year-end mad dash of burning through the training budget.

We have all seen the year-end approaches when the word comes down from corporate that there is “X” thousands of dollars that needs to be spent on training by year end or it will be lost. Then it becomes a mad dash of first come, first served free for all, with little thought as to what employees are actually getting training for. If a manager has

Robert J. Mavretich, bmav@rocketmail.com

a plan that has been articulated and vetted amongst employees, they can be the manager who pulls out a multi-year forecast sheet, submits pragmatic training for staff to senior management (complete with accurate costs), and just advances the training plan by six months to a year - all within 10 minutes.

The benefits of long term planning can pay off handsomely to both the strategic forward- thinking manager and the engaged employee. If budgets are pinched, this may be an opportunity to invite the employee to carry some of the cost. Some employees may value that training opportunity so much that they are willing (and financially able) to bear some percentage of the cost if they feel it will be extremely beneficial to their long term success, while working to the company benefit.

***Recognize, reward, and repeat; provide incentives for completing training***

When management provides the opportunity for employees to learn new skills through training, it is also important to recognize that these individuals have earned some kudos for their hard work. “If you set a path for advancement and challenge people you will often be pleasantly surprised” (Northcutt, 2012). Consider paying for their lunch or offering a prime parking spot for one month. Would it be possible to award an extra day off or extra day work from home day perhaps? The ways in which employees are rewarded is subjective, as long as there is actually follow through.

This should not be a one-time event either; this should be something that occurs regularly and at a minimum once per year to accommodate the fact that everyone’s training may not be at the same time during the year. Establishing a repetitive process of recognition is advisable to connect the dots of rewarding employees for completing training in pursuit of their stated goals. “Building a successful career is both a privilege and responsibility. The more authority you bring to your career, the more you can do to serve others and the greater your impact will be” (Pavlina, 2010). Both employees and

Robert J. Mavretich, bmav@rocketmail.com

managers often forget that service is a key ingredient in success, mixed in with a little humility as well.

Managers should encourage others as well to recognize their peers for a job well done, and can use the opportunity to sell the value of the training to senior management. “In withholding your recognition of another person’s contribution to a team’s success, you are not only sowing injustice and treating people unfairly, but you are depriving people of the emotional payoff that comes with success. Instead they feel forgotten, ignored, pushed to the side. And they resent you for it. If you really want to tick people off, don’t recognize their contributions” (Goldsmith, 2007). If internal customers, fellow employees from outside the division, recognize an increase in performance or some other action taken that was considered above and beyond, they can be leveraged to provide that positive feedback that employees are typically fond of.

As a manager, it can be a point of pride knowing that support of that employee’s training may have contributed to that customer compliment of your employee. A self-reinforcing loop of positive feedback has taken root and can be maintained and provide beneficial when the time may come to give less than positive feedback to that employee. They already know that they are supported and encouraged, making it likely that they will be receptive to *any* feedback that needs to be given.

***Provide advancement (positional and/or financial) to solidify retention and ROI***

This is usually harder than the training budget funding, but also because so many other factors can go into this decision. When sending these employees to training, the implication of completing the training should be a more efficient worker; providing better quality work; with fewer defects; and as a result happier customers. This should translate into better morale, higher profits, and more company success. Even if company stock or year-end bonuses aren't an option, there should be some material way to ensure that employees share in that success, especially if they have worked hard and have done all that has been asked of them.

Advancement potential is a tricky slope as well, but can be managed sometimes easier than the financial aspect of leader's responsibilities. This should be a very important consideration for management, otherwise they will actually see their good faith efforts squandered when the employee does leave for greener pastures because they weren't promoted or given a performance raise after they've proved their competency. Instead of Desktop Support I, consider Technical Analyst as a title instead. This will also help your employee overcome roadblocks when they want to advance in the organization, because sometimes a title can be very misleading as to what the employee actually does. For an analyst who doesn't architect solutions, why would engineer be anywhere in the title? If the employee is a developer, Senior Developer commands more respect than Developer 2 does.

It is imperative that good employees get the chance to shine as a result of all their hard work and have faith that their efforts will result in increased opportunities within the organization. Taking the time to establish clear lines of promotion will help formalize the desired competencies of an organization (or specific division) so there is no confusion. If employees see a clear path within their career at the company, the likelihood of them sticking around and becoming effective mentors and leaders increases exponentially.

Admittedly, this is a bit easier in disciplines such as information technology. If an employee joins the company as a developer and completes coding work in short order

Robert J. Mavretich, [bmav@rocketmail.com](mailto:bmav@rocketmail.com)

and asks for more, it is likely they will be promoted from a junior developer to a senior developer rather quickly with an increase in pay. Within the sales department if a salesperson sells a lot of product, business services, etc., they are typically compensated highly and “promoted” to more lucrative opportunities even if there is no title change in this particular scenario.

Completion of appropriate training can be used to ensure that once the goals have been achieved, the employee has a great shot at advancement within your organization. If you have supported this employee and spent financial resources on them for a number of years, the company that supported them and provided training should be the organization to benefit from their increased competencies.

## Conclusion

The constant training of employees should be an important and widespread organizational goal. “The better the talent on the team, the better the team. Make it a priority to hire well and develop hired employees to achieve their potential” (Northcutt, 2012). There has been much written about the coming shortage of skilled labor in manufacturing and IT specifically, but the need to have equally skilled management to lead with this coming paradigm shift needs to be considered as well. Technical employees may eventually be called upon to lead, and should continue to learn in both informal (at work) and formal settings (time away from work learning a skill). The process of repeated, targeted training will allow for constant opportunities for both management and employees to make the necessary strides that will increase various competencies that keep customers coming back and employees happy. This will create a self-reinforcing loop of loyalty to the organization for years to come.

The short list of developing people can be distilled into a few key principles:

- “Consistently treat people with dignity;
  - Ask people what they need to do their work better;
  - Ensure that people receive the training they need to succeed;
  - Provide effective coaching;
  - Provide developmental feedback in a timely manner;
  - Provide effective recognition for other’s achievements”
- (Goldsmith, 2007).

If there is an earnest effort by management at all levels to follow these principles, then both the training program and the company should meet with success.

## References

- Christian, J. (2012, Jan 6). Growing debt among nontraditional, older students. Retrieved from [http://campusprogress.org/articles/growing\\_debt\\_among\\_nontraditional\\_older\\_students/](http://campusprogress.org/articles/growing_debt_among_nontraditional_older_students/)
- Fitzgerald, J. (2012, Oct 7). *College degree is costly, but it pays off over time*. Retrieved from <http://www.bostonglobe.com/business/2012/10/06/investment-higher-still-pays-today-economy/GV7iVC5847KP7g6zUvziEM/story.html>
- Goldsmith, M. (2007). *What got you here won't get you there*. (1st ed., pp. 71-72, 111-112, 161-166, 227). New York: Hyperion/HarperCollins.
- Griffin, J. (2011, Jul 24). Free LMS for the small business. Retrieved from <http://trainingmag.com/article/free-lms-small-business>
- Heathfield, S. (n.d.). *The 12 best ways to do on-the-job training*. Retrieved from <http://humanresources.about.com/od/new/tp/provide-job-training.htm>
- Homs, D. (2013, May 28). *Spain's 'lost generation': Youth unemployment hits 57 percent*. Retrieved from [http://www.huffingtonpost.com/2013/05/28/spain-lost-generation\\_n\\_3344183.html](http://www.huffingtonpost.com/2013/05/28/spain-lost-generation_n_3344183.html)
- Kavilanz, P. (2012, July 23). Desperately seeking americans for factory jobs. Retrieved from [http://money.cnn.com/2012/02/16/smallbusiness/manufacturing\\_jobs/index.htm](http://money.cnn.com/2012/02/16/smallbusiness/manufacturing_jobs/index.htm)
- Kremer, W., & Hammond, C. (2013, July 4). *Hikikomori: Why are so many japanese men refusing to leave their rooms?*. Retrieved from <http://www.bbc.co.uk/news/magazine-23182523>

Robert J. Mavretich, bmav@rocketmail.com

Luhbi, T. (2011, Aug 01). Community colleges step in to fill 'skills gap'. Retrieved from [http://money.cnn.com/2011/08/01/news/economy/community\\_colleges/index.html?iid=E](http://money.cnn.com/2011/08/01/news/economy/community_colleges/index.html?iid=E)

Mehta, S. (2012, Dec 5). The "skills gap": As bad as (almost) everyone thinks. Retrieved from <http://postcards.blogs.fortune.cnn.com/2012/12/05/the-skills-gap-as-bad-as-almost-everyone-thinks/?iid=obnetwork>

Northcutt, S. (2012). *Sans security leadership essentials for managers with knowledge compression*. (V2012\_0529 ed., Vol. 512.1). Baltimore: The SANS Institute.

Northcutt, S. (2012). *Sans security leadership essentials for managers with knowledge compression*. (V2012\_0529 ed., Vol. 512.4). Baltimore: The SANS Institute.

Northcutt, S. (2012). *Sans security leadership essentials for managers with knowledge compression*. (V2012\_0529 ed., Vol. 512.5). Baltimore: The SANS Institute.

Pavlina, S. (2010). *Personal development for smart people: The conscious pursuit of personal growth*. (3rd ed., pp. 168-170). Carlsbad, California: Hay House, Inc.

Sen, C. (2013, Jan 15). The economy's worst enemy now is demographics (and it's about to be our best friend). Retrieved from <http://finance.yahoo.com/news/economys-worst-enemy-now-demographics-181324546.html>.

Velshi, A. (2012, June 29). It's time to give college a rethink. Retrieved from <http://money.cnn.com/2012/02/29/pf/college/college>

Velshi, A. (2012, Dec 10). Career lessons from gen y. Retrieved from [http://money.cnn.com/2012/12/01/pf/career-advice.moneymag/index.html?iid=H\\_M\\_News](http://money.cnn.com/2012/12/01/pf/career-advice.moneymag/index.html?iid=H_M_News)

(n.d.). Retrieved from <http://www.docstoc.com/docs/4960189/Sample-Training-Plan---DOC>

Robert J. Mavretich, [bmav@rocketmail.com](mailto:bmav@rocketmail.com)

© 2013 SANS Institute, Author retains full rights.