Executive Summary

Recruiting and attracting IT talent remains a challenge for IT executives and will once again come to the forefront as the world’s economies begin to emerge from recession. As this happens, we expect skills shortages to rise up the IT management agenda, especially as the “baby boomer” generation begins to retire and as the number of computer science graduates reduces. To help IT recruiters face the challenges, we provide a four-quadrant framework that segments recruitment activities on two dimensions—the recruitment timescale and the scarcity of the skills required.

Based on the experiences of German industrial giant Siemens, we have identified the recruitment methods that can be applied in each quadrant and provide an indication of their relative costs. We conclude with eight recommendations for improving the recruitment of IT talent in an era when skilled people increasingly expect to be contacted—even wooed—by prospective employers rather actively searching for opportunities themselves.

THE CHALLENGES OF IT RECRUITMENT

To paraphrase Oscar Wilde, “The best way to appreciate your staff is to imagine yourself without it.” Many firms may soon have to confront this uncomfortable possibility for their IT staff.

Attracting, recruiting, and retaining qualified IT staff is one of the biggest challenges IT executives face. Although IT skills shortages may have been eased by the current global economic crisis, the demand for IT workers will undoubtedly increase as the world emerges from recession. IT executives will then once again find themselves competing for scarce IT skills. The skills shortage will be exacerbated by older IT experts reaching retirement and by a shrinking number of computer science graduates. To date, though, no comprehensive approach to recruiting scarce IT workers has been developed.

Since 2002, we have studied the recruitment of IT personnel in Europe and conducted nearly 40 interviews with IT and HR executives responsible for recruiting IT staff at major enterprises. We have identified several innovative and effective approaches to hiring IT talent in different industries and in companies of various sizes. However, there is no universally applicable “best” way of finding good candidates—some skills and expertise are scarce and require more bespoke approaches than other vacancies that can usually be filled with inexpensive standard recruitment methods.

1 Joe Rottman, Leslie Willcocks, and Ilan Oshri are the accepting Senior Editors for this article.
2 We are very grateful to Dr. Hans-Christoph Kuern, head of e-recruiting at Siemens AG, Global Shared Services, Human Resources, for sharing his innovative ideas and his great support.
Like an angler trying to catch the biggest fish, recruiters face diverse challenges, including:

- Where to find particular skill sets (like finding a secret fishing hole or a fish’s favorite place).
- Whether to use targeted methods, such as an active search via social networking platforms, or broader methods, such as placing adverts on Internet job boards (akin to deciding whether to cast a rod or a net).
- What message and channels to use for communicating with candidates (deciding what bait to use).

We have also studied how Siemens, the German industrial giant, has sourced IT talent over the last 20 years. Based on the approaches identified in our interviews and in the Siemens case, we have developed an integrated framework, termed FIT (Finding [or Fishing for] IT Talent) that addresses the most challenging issues of recruiting IT talent: talent scarcity, recruitment time horizon, and recruitment cost. The FIT framework is designed to guide IT executives through modern recruitment and help them address the challenge of recruiting scarce IT talent in a recruitment environment that is increasingly online and impersonal, and active rather than passive.

THE FIT FRAMEWORK FOR RECRUITING IT TALENT

To select the appropriate recruitment approach(es), managers must consider the scarcity of the skill set being sought, the timeframe within which a vacancy needs to be filled, and recruitment costs. In some cases, a firm may require a highly qualified person with a very specific skill to fill a vacant position; in other cases, a university partnership program can provide access to a larger number of people with more general IT skills over the near term.

The basic FIT framework has two dimensions, as shown in Figure 1:

- **Scarcity**—people with some IT skills are scarcer in the IT job market than others.
- **Timescale**—the timescale for reaching out to candidates. Short-term recruitment activities are used when there is a vacancy that needs to be filled; long-term approaches focus, for example, on adding to a company’s pool of potential candidates and “binding” them to the company.⁵

The four quadrants of the FIT Framework distinguish between general recruitment activities aimed at filling “standard” IT roles (e.g., placing traditional ads on Internet job boards or in print media) and more customized searches for specialized and scarce IT talent profiles (e.g., using social networking sites or other so-called “Web 2.0” tools). Some vacancies can be filled at short notice without a great deal of trouble; in other cases, the search becomes more difficult because there are not enough suitable applicants available, and a long-term effort is needed to build a relationship with the particular group of people who have the required skills. Unfortunately, the trend is for more IT talent profiles to become scarcer, so a structured recruitment approach that addresses the scarcity and timescale dimensions is clearly needed.

A third variable needs to be considered when choosing the most appropriate recruitment approach—cost. For example, using a headhunter is more expensive than placing an online advert. Later in this article, we repeat the framework diagram, but this time include the recruitment methods that can be applied in each quadrant, along with their relative costs (see Figure 2). These costs are based on the estimates of the recruitment managers we interviewed.

**Quadrant 1: Short-Term Activities to Recruit Readily Available Skills**

This quadrant commonly applies to the recruitment of people with average skill profiles. The recruitment practices used assume there will be sufficient candidates in the job market who can largely be reached and attracted passively through mass communication media. So the recruitment manager posts a vacancy and waits for applications. These methods are usually applied as a first step for every vacancy in an organization, and further action is taken when too few or insufficiently qualified candidates respond. Continuing with the angling analogy, this is like fishing in a stocked pond, and the only effort required is to cast a huge net and hope to catch a decent number of fish. Thus we label this quadrant “Use a net and wait.”

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⁵ Companies that focus solely on filling IT vacancies in the short-term and with relatively high turnover rates are said to have a “task-focused mindset,” in contrast to “human capital-focused” companies, which view their IT personnel as long-term prospects and invest in them through regular training and development. See Agarwal, R., Brown, C., Ferratt, T., and Moore, J. E. “Five mindsets for retaining IT Staff,” *MIS Quarterly Executive* (5:3), 2006, pp. 137–150.
Quadrant 2: Short-Term Activities to Recruit Scarce Skills

An example of recruitment in this quadrant is a firm that is urgently looking for someone highly proficient in a very rare programming language or experienced with an esoteric operating system that has recently turned out to be a critical part of a change process. In this situation, the recruiter takes an active role and approaches candidates directly. The major difference compared with Quadrant 1 is that the recruiter needs to be much more familiar with potential candidates’ communication behavior. In particular, actively approaching candidates implies that the recruiter understands candidates’ interests and communication channels and can identify which niche online job boards, blogs, or social networking sites to use, which peer groups to infiltrate, and which arguments to use to generate an application.

Thus a precondition for recruiting in this quadrant is to research the behavior, preferences, and so on of the scarce group of people with the required IT skills. This will enable recruiters to identify possible communication channels and to design attractive messages that will catch the attention of the target groups. In our angling analogy, recruiters should go to where the fish are (i.e., use the right communication channel) and use the right bait (i.e., an attractive message).

Quadrant 3: Long-Term Activities to Recruit Readily Available Skills

In contrast to the two short-term quadrants, the basic idea in this quadrant is to develop talent so it is available when it is needed. Accordingly, the practices in this quadrant are aimed at attracting candidates at an early stage and binding them to the company over the long run, so the company can recruit from among them when a vacancy occurs in the future. This is similar to an angler feeding the fish at some of his favorite spots so that there are more and better fish to catch at a later date.

Quadrant 4: Long-Term Activities to Recruit Scarce Skills

In this quadrant, the recruitment manager has to become even more familiar with the details of the different target groups than in Quadrant 3. The general idea is for recruiters to gain a deep familiarity with potential candidates’ environment, values, and goals. As an example, one of our interviewees suggested that recruiters of teenagers read teen magazines at least once a month and become a credible World of Warcraft player if they want to design effective retention and communication strategies that resonate with that target group. Achieving this in the area of IT recruitment may require, for example, establishing talent ambassador roles (described later,
in Recommendation 3), where current IT employees reach out to or even establish relevant social communities. Anglers have long been aware of this approach: the most successful are said to think like fish, on rare occasions, befriend fish, and even more rarely, begin to look like fish.

Just as there are many ways to catch a trout, there are diverse approaches an organization can take to fill an IT vacancy. They can adopt a passive approach—placing ads for jobs and waiting for applications; they can be proactive—searching for and attracting IT talent directly; or they can adopt more strategic long-term methods aimed at maintaining their IT talent pipeline.

RECRUITING IT TALENT AT SIEMENS

To discuss and describe the FIT framework in greater detail, we have drawn on Siemens’ activities in sourcing IT talent in Europe over the last 20 years. Siemens is divided into three divisions—Siemens Industry, Siemens Energy, and Siemens Healthcare—with two businesses, Siemens IT Solutions and Services, and Siemens Financial Services, that overarch these divisions. In 2008, Siemens had 430,000 employees and a global turnover of 72.4 billion euros ($107.9 billion).

We describe the successful IT recruitment methods Siemens has used in each of the quadrants of the FIT framework. Our findings from the Siemens case are supplemented by additional data from an online survey we conducted in 2009 of more than 1,000 IT workers in firms across all industries and of all age groups.

Short-Term Activities to Recruit Readily Available Skills

Traditional Recruitment Methods. Siemens’ rapid expansion in the 1980s and 1990s gave its recruitment department the challenge of meeting a high level of demand for highly qualified IT staff. Until the mid-1990s, the recruitment process used traditional methods, such as posting job vacancies on the company notice boards and placing vacancies with the federal employment agency, temporary employment agencies (such as Kelly Services and Manpower), and print media. While these IT recruitment channels are still important for Siemens, the recruitment process has changed a lot over the last 20 years. As the Siemens hiring manager told us: “Employment ads in regional print media are the only ones worthwhile for reaching IT candidates; ads in national newspapers tend to be too expensive and less effective.”

Web-based Channels. In October 1996, Siemens’ organizational development department began to advertise open positions on the company’s intranet. “This was the birth of e-recruitment at Siemens,” said the current head of the e-recruitment section at Siemens, who was then a member of that department. The rationale for advertising jobs on the intranet was that no one is better at taking care of their careers and finding a new job than employees themselves. They only need the opportunity to do so. Shortly after this, vacancies for IT personnel were also published on the careers section of the corporate website.

The importance and users of the web channel for IT recruitment have changed a lot over the years. In the late 1990s, the corporate website was an exclusive way to approach highly qualified IT talent. Today, though, Siemens advertises on the major online job boards (such as Monster.com), mainly because of image—all IT job seekers expect to find Siemens there. In the words of the responsible hiring manager:

“Job seekers expect us to be on large job boards, so we are present on these platforms to enable a first contact between the company and qualified talent. The largest part of IT staff we’ve hired made their first contact with Siemens through a job ad published on an online job board. Thanks to online job boards, the number of applications we receive has risen by 15%.”

Our survey data shows widespread use of online job boards by IT workers regardless of industry or age: 98% make use of these boards, to a greater or lesser degree, when they search for information about potential employers and open positions.

Figure 1 provides an overview of the methods used by Siemens to recruit IT personnel in the low skills scarcity/short-term timescale quadrant of the FIT Framework, together with results from our survey on the use of each method.

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**Figure 1: Short-Term Recruitment Methods For Readily Available Skills**

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<td>“The major advantage of job ads on internal notice boards is they satisfy employees’ common need to know about internal career opportunities.”</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Announcing vacancies at the federal employment agency to involve state-run labor market institutions</td>
<td>“The federal employment agency still offers an interesting opportunity to reach IT talent at zero cost …”</td>
<td>Almost half of IT workers surveyed contact the federal employment agency for information about employers looking for new staff.</td>
</tr>
<tr>
<td>Announcing vacancies at temporary employment agencies to involve privately run labor market institutions and recruit temporary staff</td>
<td>“… temporary employment agencies are absolutely on the upswing as they have changed their candidate portfolios from low- to high-skill IT talent and react quickly to changing environmental conditions. So we recently launched our own in-house agency.”</td>
<td>25% of IT workers surveyed contact temporary employment agencies while looking for a job.</td>
</tr>
<tr>
<td>Job ads published in print media such as newspapers, magazines, etc.</td>
<td>“Employment ads in regional print media are the only ones worthwhile for reaching IT candidates; ads in national newspapers tend to be too expensive and less effective.”</td>
<td>89% of IT workers use print media, among others, for information about employers looking for new IT staff. However, only 18.6% believe there is a good chance of finding a job in this way.</td>
</tr>
<tr>
<td>Job ads published on company’s website accessed via the corporate intranet or Internet</td>
<td>“Our corporate career website is the No. 1 recruiting channel for Siemens. It is very easy for us to find candidates because, on a national level, everybody knows us.”</td>
<td>90% of IT workers use corporate websites to get information about potential employers and open positions.</td>
</tr>
<tr>
<td>Job ads published on online job boards</td>
<td>“Job seekers expect us to be on large job boards, so we are present on these platforms to enable a first contact between the company and qualified talent. The largest part of IT staff we’ve hired made their first contact with Siemens through a job ad published in an online job board. Thanks to online job boards, the number of applications we receive has risen by 15%.”</td>
<td>Only 2% of IT workers in our survey do not use online job boards during their information search about potential employers and open positions; 60.9% expect at least a good chance of finding a new job in this way.</td>
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**Short-Term Activities to Recruit Scarce Skills**

The major difference when looking for people with scarce skill profiles is that recruiters need to be more active in reaching out to individuals with the required talent and that the methods used often need to target a specific group. This implies that recruiters should understand candidates’ expectations and adapt communication channels to match the norms of the target group.

**Searching Online Résumé Databases.** When a company needs to recruit a highly qualified IT person with scarce skills, recruiters need to be active in filling the vacancy and not wait passively until a suitable application is sent in. An example of active recruiting is Siemens’ use of online résumé databases offered by the major online job boards. Siemens searches these databases to identify qualified candidates. As one of our interviewees told us, “Résumé databases are another useful component for IT recruitment, since IT talent often uses these databases to test their individual...
market value.” Seven out of ten IT workers in our survey publish their CVs on such databases.

**Niche Online Job Boards.** Siemens also places adverts on niche online job boards aimed at a highly specialized candidate audience and regards this as a useful way to approach scarce IT talent in a short timeframe. This channel also reduces the time to hire, by providing “a convenient opportunity for contacting specific IT profiles. Since we’ve been posting job ads on niche boards, we have reduced the time to hire for specific IT profiles by 20%.”

**Maintaining a Talent Pool.** Niche job boards also provide a continuous stream of specialists whose details are stored in Siemens’ talent pool. One interviewee told us:

“One of the most efficient [recruitment] channels is our talent pool. On the one hand, it is a low-cost channel, and, on the other hand, it offers the opportunity for comprehensive matching activities. We ask every qualified applicant we cannot employ at the moment whether we are allowed to store his or her data in the talent pool. Only 1% refuses.”

At present, Siemens has approximately 9,000 background profiles of IT specialists stored in its talent pool. The company would like to expand the pool by including the profiles of current and former employees, with the aim of gradually expanding the number of relevant candidates and improving the match between vacancies and candidates. For example, current employees in other company departments who have appropriate training and IT backgrounds could, as part of job-rotation schemes, be introduced to new IT jobs.

Recruiting existing employees is of great benefit to the company because it avoids the occasionally high costs of identifying appropriate external candidates. Rotating employees also spreads their knowledge more widely in the company. Another positive aspect of internal recruitment is that it helps to retain employees and therefore reduces employee turnover.

**Referral Programs.** Current IT employees can play an important role in recruitment by referring people in their social network of friends, acquaintances, etc. as candidates to work at Siemens. Indeed, the company’s referral programs have a huge impact on IT recruitment since existing IT employees are uniquely qualified to assess IT qualifications and to help convince their acquaintances of the advantages of working at Siemens. As a Siemens hiring manager explained: “We use all of our IT employees as additional recruiters who can refer their friends and relatives for open IT positions. This is an inexpensive approach but requires ongoing motivation.”

The close personal link between IT employee and candidate, as well as the relatively low costs, are both advantages of the company’s referral programs.

**Web 2.0 Platforms.** Web 2.0 platforms have broadened the opportunities to recruit scarce talent in a short timescale. In particular, Siemens has found that business social networking platforms (such as LinkedIn) offer good opportunities for identifying potential candidates for positions in IT, sales, marketing, and general business roles. “Platforms like LinkedIn offer great value. You gain a lot of information about interesting IT candidates for less money. They also provide one of the best channels for reaching [potential] job seekers currently employed by another company.” Three out of four respondents of our survey of IT workers use LinkedIn and similar platforms to search for information about employers and open positions.

Other Web 2.0 applications like blogs or employer-rating websites are also good ways of identifying people with scarce IT skills. Siemens considers blogs to be an interesting way of approaching particular candidates. For example, Siemens Rail was having no success in filling a position for a specialized programmer for railway signaling technology. To understand the target group better, the company conducted a survey of current employees with identical job profiles, which revealed that many of these employees are model railroad enthusiasts. So after months of search using other channels, the company placed an advert, or rather a notice, on the blog of the biggest European model railroad retailer. A very good candidate contacted Siemens within a few days and applied for the vacancy.

Siemens believes that contributing to blogs, which enable self-defined and actual experts to correspond with each other, is a good way to search for candidates with very specific skill profiles. Thus Siemens targets both blogs focused on specific professional interests and blogs where the discussion revolves mainly around the leisure activities or hobbies of the participants. A hiring manager reported that “In blogs, you might find a highly specialized IT expert at a lower search cost. The overall effort might be huge, but it is a good source for an active search—as our railway programmer case indicates.”
Employer rating platforms also offer a new way to approach IT talent. These Web 2.0 platforms are forums where IT employees can rate their current employers, colleagues, job profiles, and so on. Siemens sees this channel as a way to reach potential candidates who are most likely to leave their current jobs: “This is brand new, and we are one of the first companies in Germany, even in Europe, that is posting vacancies on these boards to reach dissatisfied IT talent at other companies directly.”

Peer Group Marketing. A newly implemented part of Siemens’ strategy to position the company as an attractive employer is to focus not just on potential IT candidates but also on people in their social networks, including family and friends. This strategy involves a form of peer group marketing. As a Siemens hiring manager explained: “Every company contacts and influences IT talent directly. We also try to influence them indirectly by contacting and communicating with their peer groups. We expect [this practice] to grow our number of IT talent applications by 10% each year.”

The attractiveness of this approach was borne out by our survey respondents. Three out of four regard their spouse as a very important advisor about potential employers or places of work, and six out of ten think the same of their friends.

Siemens would also like to implement a form of peer group marketing that has been successful for some other companies:7 creating awareness of the firm as a desirable employer among a group of young prospective IT apprentices (between the ages of 16 and 20) primarily through their parents, friends, and teachers. This would be done through banner ads, for example on cooking websites and on news and sports pages (as another firm did successfully). The adverts would be targeted at parents and highlight IT apprenticeships at Siemens.

Using Headhunters. As well as actively approaching IT talent directly or through social networking sites, a company can employ a headhunter to identify and contact suitable candidates. Although a headhunter is one of the most effective ways to hire executive-level IT talent, this approach is very expensive. In our survey, two in three IT workers contact headhunters, and 43.6% believe they stand a good chance of finding a new job through a headhunter.

Figure 2 summarizes the methods used by Siemens to recruit IT personnel with scarce skills over a short time horizon (Quadrant 2 of the FIT Framework), together with results from our survey on the use of each method. These methods involve recruiters actively engaging in approaching suitable candidates.

Long-Term Activities For Recruiting Readily Available Skills

In contrast to the short-term methods described above, long-term recruitment activities are aimed at capturing the interest of future applicants and positioning the company as an employer of choice.

Offering Internships. An example of a long-term recruitment activity is the way in which Siemens approaches its key target groups, which include information systems and computer science students. Siemens makes direct contacts with these students after their first year by participating in on-campus job fairs at 30 selected key universities across Europe, so that it can gain early access to these groups. Student candidates of interest are offered internships and evaluated during project work. As a Siemens hiring manager emphasized: “Internships are one of my personal favorites, because you acquire young IT talent for almost nothing, and they build a strong relationship to Siemens and a commitment to our corporate culture. Almost 70% of former interns will apply for a position at Siemens after graduation.”

Student Development Program. After internships, the most promising are integrated into TOPAZ, Siemens’ student development program, which means they are automatically included in the company’s candidate relationship management program (which is described in the next section). The aim is to tie promising potential candidates early to the company and thus provide a steady stream of interns, apprentices, and graduates for the IT talent pipeline. The time horizon for TOPAZ is long-term: “TOPAZ has a high cost and requires time but helps fill our long-term need for IT junior executives. Nearly 100% of the IT students in our development program will apply for a job at Siemens after finishing their studies, and nearly 50% are hired.”

Attending Job Fairs. Siemens also builds relationships with young IT graduates by attending regular job fairs. The firm sends HR executives to large national job fairs in an effort to attract a larger pool of IT talent. As a Siemens hiring manager told us: “Job fairs are good for establishing the first face-to-face contact with IT talent, which helps reduce
## Figure 2: Short-Term Recruitment Methods For Highly Scarce Skills

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<td>Seven out of ten IT workers surveyed publish their CV on a database where companies can look for qualified IT staff. In addition, nearly half indicated that they prefer being contacted by the company instead of searching for opportunities on their own.</td>
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<td>Publishing job ads on specific niche online job boards</td>
<td>“[Niche job boards] provide a convenient opportunity for [positioning the company as an attractive employer] and contacting specific IT profiles. Since we’ve been posting job ads on niche boards, we have reduced the time to hire for specific IT profiles by 20%.”</td>
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<td>Searching in the company’s talent pool, which also holds profiles of current and former employees</td>
<td>“One of the most efficient channels is our talent pool. On the one hand, it is a low-cost channel and, on the other hand, it offers the opportunity for comprehensive matching activities. We ask every qualified applicant we cannot employ at the moment whether we are allowed to store his or her data in the talent pool. Only 1% refuses.”</td>
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<td>Employee referral programs</td>
<td>“We use all of our IT employees as additional recruiters who can refer their friends and relatives for open IT positions. This is an inexpensive approach but requires ongoing motivation.”</td>
<td>43.3% of the IT workers surveyed expect at least a good chance of finding a job through their personal networks.</td>
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<td>Searching in social networking platforms like LinkedIn, blogs, or the Internet itself to find suitable candidates</td>
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<td>Almost 20% of IT workers surveyed use employer rating platforms to get information about employers.</td>
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the impersonal nature of the later online application process.”

The long-term recruitment methods used by Siemens for IT worker groups with low skills (Quadrant 3 of the FIT Framework) are set out in Figure 3, along with relevant data from our survey.

### Long-Term Activities For Recruiting Scarc Skills

**Candidate Relationship Management.** In the long-term, candidate relationship management can be a very effective technique for finding and staying in touch with people with extremely scarce skill profiles, including current and former employees. “In the search for IT staff, we make it clear that we particularly want to speak to former employees, since they have already internalized Siemens’ way of working and the company’s culture and can therefore be quickly and smoothly reintegrated into the company.” Siemens conducts exit interviews with all employees leaving the IT area to discover their reasons for leaving. After detailed analysis, candidates for possible future re-employment with Siemens are added to the talent pool and thus become part of

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<td>Employing headhunters to search for candidates for a specific vacancy</td>
<td>“Headhunters are very expensive, although they remain one of the best ways to hire executive-level IT talent.”</td>
<td>Two-thirds of our survey respondents contact headhunters and 43.6% see a high chance of finding a new job via this channel.</td>
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Figure 2: Short-Term Recruitment Methods For Highly Scarce Skills (cont.)

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Figure 3: Long-Term Recruitment Methods For Readily Available Skills
In Siemens’ view, maintaining good relationships with former employees should not be limited to sending a birthday card each year but should include activities, invitations, or events to which potential future candidates will look forward. For example, an individual might be offered free tickets to concerts or events that are specifically aimed at his or her hobbies and leisure interests. To ensure the invitations are valued, the company obviously has to hold accurate information about each individual’s interests.

Candidate relationship management is not restricted to existing and former employees; it can also be applied to potential employees, like members of the student development program, who have not yet worked for the company but who are of great interest to the company in the future. Binding them to Siemens at an early stage enables the company to establish a good employer image among this target group and have motivated candidates available when the company needs to fill an IT vacancy.

Candidate relationship management is a major theme at Siemens. The goal is not to fill vacancies in the short term, but to establish a long-term link between the company and IT workers with scarce skills, to enhance the chance of them becoming potential applicants in the future. As a Siemens executive responsible for staff recruitment stated:

“Candidate relationship management gives IT talent the most relevant information that we’re a cool company and not the standard boring IT employer. We receive a large number of applications from this group. Since we are more familiar with those in the program than with external candidates, it takes less of an effort to make our selections.”

**Participating in Virtual Worlds.** Siemens’ most recent recruitment initiative continues the theme of building a good employer image among target groups of IT workers with scarce skills. Following the lead of IBM, Siemens is planning to integrate virtual worlds into the search process for IT professionals. The company intends to present itself at virtual job fairs in virtual worlds. From one Siemens’ hiring manager’s perspective: “Here, you can reach people with a real IT affinity and do so almost exclusively—since most large companies are not represented in this environment.” Our survey data supports the potential of this initiative—more than a quarter of IT workers surveyed attend virtual job fairs.

The long-term recruitment methods used by Siemens for IT worker groups with highly scarce skills (Quadrant 4 of the FIT Framework) are described in Figure 4, together with relevant findings from our survey of IT workers.

### LESSONS LEARNED

Success with any of the short- or long-term methods described above depends on the particular circumstances of a firm as well as the mix of activities. For Siemens, the long-term methods have proved to be valuable for recruiting scarce IT talent and, in particular, for filling the IT talent pipeline; the
short-term active recruiting practices have been most appropriate for filling IT vacancies quickly.

Figure 5 shows the FIT Framework again, but this time overlaid with the recruitment methods used by Siemens, together with an indication of their relative costs.

Our interviewees at Siemens stressed that it is important to note that the cost per job advert (bottom left) cannot easily be compared to the cost of a candidate relationship management program (top right), for two reasons. First, a more individualized approach will more likely lead to an application that is also probably better. Second, the “value” of a new hire for a particular job is very difficult, if not impossible, to estimate, and IT recruiters are nowhere near being able to determine such a cost/benefit trade-off. But the Siemens case clearly indicates that long-term methods implemented today can ease the recruiting challenges in the future.

The Siemens case shows that success in recruiting IT talent is based on two strategic pillars. First, Siemens generates a large number of external applicants because of its finely honed candidate-attraction
strategy focused on target group orientation. The company must therefore be familiar with its particular target groups and their environments so it can have a presence wherever potential candidates are, whether in the real or virtual worlds. Activities to position Siemens as a good place to work underpin its candidate relationship management program and all methods used to recruit people with scarce skills.

Extensive surveys of current staff and market studies have shown that Siemens has developed candidate attraction strategies that can reach every single IT group. The responsible manager pointed out that “Every external candidate is an individual and acts in a different way, just like every employee in our IT departments. One cannot treat a software developer the same as an IT portfolio manager or system administrator.”

Second, Siemens also uses a multichannel approach for its recruitment activities, combining different types of media. This supports the view that an exclusive focus on online methods or on targeted offline activities is not sufficient. A meaningful combination of both makes it possible to reach candidates both on- and offline. An example of the multichannel approach used by the company is the use of radio and TV spots that direct the audience to the Siemens website for further information about career opportunities and how to apply. Print media advertisements include the company’s URL and the e-mail address of the relevant contact in the recruitment department. How and where multichannel approaches are used depends, among others things, on channel preferences of the relevant target group: “We must constantly seek new channels for publishing advertisements and always keep in the back of our minds who the target groups are that we actually seek.”

**RECOMMENDATIONS FOR IMPROVING THE RECRUITMENT OF IT TALENT**

Based on the Siemens case and other research conducted by our team since 2002, we provide recommendations for improving the recruitment of IT talent. We group the recommendations by short-term activities, long-term activities, recruitment of highly scarce IT talent, and the skill set required by IT recruiters.

**Short-Term Activities**

**Recommendation 1: Use individual channels (both on- and offline) to approach and attract candidate groups.** There are many different short-term methods that can be used to attract IT talent, as shown on the left side of Figure 2. These can be applied both off- and online, depending on which method is likely to be the most effective way to attract the particular type of IT talent being sought. An important distinction is whether the method is used actively or passively. The scarcer the skill, the more appropriate it is to employ active searching. However, it is important to be present on large online job boards so your company is perceived by job seekers as a major IT employer.

Often, on- and offline channels require different content, but it may also be advantageous to use different content on multiple online channels. Our research indicates that job seekers go through two stages. First, they gather company information to compile a list of potential employers, mostly using online job boards as their information sources. They then shorten this list by seeking more specific information, such as working hours and location, corporate culture, salary, development opportunities, and so on. They typically obtain this information from the careers section of the corporate website. They then send applications to the shortened list of companies. So candidates look for different information in different channels when compiling their initial long list than when compiling the final short list. Firms should therefore tailor the information they provide accordingly.

**Recommendation 2: Use complementary online resources such as blogs or social networking platforms to attract IT talent.** In recent years, Siemens has begun to search Web 2.0 platforms to identify people with the required IT skills. As the example of the railway signaling programmer and Siemens’ plans for future Web 2.0 use indicate, online resources such as blogs or social networking platforms like LinkedIn are useful additions to the channels for attracting and recruiting IT talent. In general, Web 2.0 platforms represent an important component of the recruitment portfolio and are especially appropriate when actively searching for new IT talent.
Long-Term Activities

Recommendation 3: Continually renew your understanding of where your potential candidates are and how you might attract their attention and interest. The Siemens case shows that while some recruitment methods have changed over the last 20 years; others—such as job adverts in print media or using temporary employment agencies—continue to be important. It is, therefore, important for organizations to renew continually their understanding of how IT talent thinks and acts, and use that understanding to develop new, effective, and efficient practices to attract their attention and interest.

One way to sustain an understanding of target groups is to appoint “talent ambassadors” who work cooperatively with the recruitment department. Ideally, a talent ambassador would be a member of the particular target group and thus personally familiar with—indeed, immersed in—the behavior and culture of its members. The key idea is that the unique personal characteristics of a talent ambassador can inform the efforts of recruiters when targeting the particular talent group. This will enable companies to enhance their understanding of which channel will be the most effective for communicating with particular IT candidate groups.

The talent ambassador role is particularly appropriate for recruiting scarce IT skills because it allows recruiters to construct carefully targeted searches. In the case of the Siemens railway signaling programmer, for example, a talent ambassador would have been involved from the beginning of the recruitment process, and we would have expected such an ambassador to have recommended searching in blogs well before Siemens actually embarked on that path.

Using talent ambassadors does require significant effort, however, and because this approach is targeted at very specific groups of individuals, it may not be appropriate for all target groups.

Recommendation 4: Establish a long-lasting relationship with potential applicants for IT positions while they are still students. With a shrinking number of students earning degrees in computer engineering and computer science and some leading universities even closing their computer science programs,[10] binding top students to the company is a must for IT talent recruitment. Siemens’ TOPAZ student development program ties promising students into the company early on in their studies. Giving them a “preferred” status in this way minimizes the chances of having to contend with other companies for these students once they graduate.

There is an advantage to connecting promising IT students early on with the company’s norms and values through internships, workshops, or other corporate events. Potential candidates who have had these experiences are much more likely to have a favorable view of the firm and consider becoming an employee after graduation.

Recommendation 5: Treat candidates as customers. Not only has the total pool of IT talent decreased, but the behavior of individual IT workers in the labor market is completely different than it was only a few years ago. Then, an overwhelming majority—some 90%—of IT workers in the labor market preferred to contact a potential employer actively with an application. Today, according to the results of our survey of 1,000 IT workers, more than 40% prefer to remain passive and wait to be approached by firms. Much like markets where there is limited competition between a small number of suppliers, companies need to treat the dwindling number of skilled IT workers like preferred customers. That implies deploying classic marketing tools such as customer relationship management as part of the IT talent recruitment process and providing special services (e.g., a 24-hour hotline) and benefits (e.g. invitations to corporate events, birthday and Christmas cards, etc.).

Recruitment of Highly Scarce Talent

Recommendation 6: Never reject a qualified application; store the details in your talent pool. Building a long-lasting relationship with potential applicants is crucial for modern recruitment. Today’s recruitment process not only has to quickly fill immediate vacancies but must also provide a continuous pipeline of IT talent to alleviate future scarcity problems. The implication is that, before being rejected, every qualified application should be considered both in terms of short- and long-term hiring needs. Extensive candidate relationship management will be needed to maintain a strong connection with qualified candidates for whom there is no current job opening.

Recommendation 7: Include present and former members of your own IT staff in your IT talent pool. The IT talent shortage is expected to worsen over time, so companies should follow Siemens’ example and extend their recruitment focus to include current and former IT employees. Former

employees are of particular interest because they are already familiar with the company, its business, and its corporate culture. Re-employing these so-called “boomerang hires” can be a highly effective recruitment channel.

A New Skill Set for Recruiters

Recommendation 8: Transform a standard recruiter to a “recruiter 2.0.” The job profile for a recruiter of IT personnel has changed dramatically over the past 20 years. IT recruiters were once mostly administratively oriented, but today, they must be internal business partners with diverse knowledge about IT, IT culture, marketing, psychology, and so on. They must be able to take both active and passive approaches to attracting and recruiting IT talent. They need a new set of abilities: publishing job adverts on online job boards or corporate websites; using Boolean operators to search in talent pools; and active sourcing and retaining of IT talent. Modern recruiters must employ different methods for different IT recruitment challenges, as the Siemens case shows. Hence, they must be effective communicators, whether face to face or through digital media. All this must become part of the standard skill set of today’s IT recruiters.

CONCLUSION

The challenges of attracting and recruiting IT talent have changed. As scarce resources, applicants for IT positions have seen the balance of power shift in their favor. Candidates are more demanding than ever before. They expect authenticity and transparency in the recruitment process. Firms are responding with strategies designed to position themselves as desirable places for IT specialists to work.

The FIT framework provides a way for IT recruiters to decide which recruitment methods are most appropriate in different situations. It shows that companies need to use both long- and short-term recruitment methods to achieve success in the “battle for brainpower.” Short-term methods focus on direct recruitment that is efficient and effective. The primary goal of long-term methods is to position the company as an “employer of choice” in the eyes of potential candidates.

Both short- and long-term activities will require different methods according to whether the required IT skills are readily available or highly scarce. For the latter, the information available through Web 2.0 portals can help identify potential candidates with the required skills and obtain useful information about their environment and expectations. Needless to say, the scarcer the skill profile, the more costly the recruitment methods.

We have shown how leading firms are successfully using new IT recruitment practices. But to make fully effective use of the framework and methods described in this article, those in charge of recruiting IT talent need a substantially broader skill set.

To paraphrase Oscar Wilde again, “Put talent into your firm, but your genius into finding the talent.”

APPENDIX: RESEARCH METHODS

Case Study Methodology

Since 2002, we have conducted over 40 case studies with companies, following the case-study process defined by Yin. For each case study, interviews were conducted in two stages. First, the context was discovered using a semi-structured interview. This was followed about a month later by a fully structured interview. The interviews took place in the company selected and lasted about two hours. Two or more representatives of the enterprises and two members of our research team were involved. The representatives were responsible for the entire IT recruitment process. To support our results, we also reviewed documents provided by the company as meeting records and project descriptions. Finally, the resulting case study report was signed off by the participating companies.

For the Siemens case, we conducted four interviews with executives over the last two years.

IT Worker Survey

In June and July 2009, we conducted an online survey of 1,000 IT workers. The purpose of this survey was to collect data on job seekers’ activities in the labor market. We chose an online survey because it seemed the best way of reaching individuals with different backgrounds. The survey participants were selected from an Internet platform where they had registered for business purposes. Those who had self-reported their area of work as IT were invited via e-mail.

Demographics of 1,000 Respondents to our Survey of IT Workers

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<tr>
<th>Gender</th>
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<tbody>
<tr>
<td>Men</td>
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<tr>
<td>Women</td>
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<table>
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<tr>
<td>26-35</td>
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<td>36-45</td>
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<tr>
<td>55 &lt;</td>
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<tr>
<td>Professional</td>
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<tr>
<td>Manager</td>
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<tr>
<td>Other</td>
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<table>
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<tr>
<th>Skill Area</th>
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<tbody>
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<tr>
<td>Database</td>
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<tr>
<td>IT Security</td>
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<tr>
<td>IT Consultant</td>
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<tr>
<td>SAP Consultant</td>
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<tr>
<td>System Administrator</td>
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<td>System Analyst</td>
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<td>Webmaster</td>
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<tr>
<td>CIO</td>
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<tr>
<td>Others</td>
<td>14.3%</td>
</tr>
</tbody>
</table>

ABOUT THE AUTHORS

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Tim Weitzel (weitzel@is-bamberg.de) is Professor and Chair in the Information Systems and Services Department at the University of Bamberg, Germany. He received his Ph.D. from Goethe-University in Frankfurt, Germany, where he was head of numerous research and consulting projects on standardization, e-finance, e-recruiting, and outsourcing. He is the author of over 60 reviewed articles and six books. His research on standards and networks, outsourcing, IT business alignment, IT adoption, and human resources information systems (HRIS) has been published in MIS Quarterly, Decision Support Systems, Journal of Information Technology, Electronic Markets, Information Systems Frontiers, Wirtschaftsinformatik, and others.

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