

## THE SKILLS SHORTAGE: A CHALLENGE FOR THE SMALL AND MEDIUM- SIZED ENTERPRISE

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**Abstract:** *This policy paper studies the skills shortage affecting small and medium-sized enterprises. Specifically, the paper focuses on the shortage of human resources knowledge, skills, and abilities and what SMEs are doing to alleviate this situation. The results show that the skill shortages are a real problem for small businesses. Moreover, the results indicate that certain skills are deemed critical for the SME survival including communications, quantitative, critical thinking, and interpersonal leadership. The most significant shortage facing SMEs might be a lack of managerial awareness of the knowledge, skills, and abilities necessary to grow the firm.*

**Keywords:** *Human resources skills shortage, workforce skills, small business survival, medium-sized enterprise, skilled labor shortage, skills outsourcing*

### INTRODUCTION

Since small businesses represent 99.7 per cent of all employer firms in the United States, the impact of small business on the economy and society cannot be overstated. The need for those companies to develop and maintain appropriate capacity with which to meet the needs of their customers – customers who range from large OEMs (original equipment manufacturers), to other medium-sized and small businesses, and to end consumers – is critical to the success of the general economy. Clearly, a vital component of small business capacity is the collective set of skills, knowledge, and abilities (KSAs) possessed by the firm’s human resources. This paper focuses on that issue.

Although the broad topic of “labor or workforce skills shortage” has long been a mainstay of interest to practitioners and scholars within the human resources management (HRM) field, the impact of the subject is obviously much broader. As crucial elements of what a company is capable of providing, employee capabilities as well as shortcomings emerge throughout any company’s managerial dialog. Skills shortages occur when “employers are unable to fill or have considerable difficulty filling, vacancies for an occupation at current levels of remuneration and conditions of employment and reasonable locations (Shah, Burk, 2008). But contemporary trends in the way business

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is conducted are acting to change the nature of that dialog and affect the roles that human resources play in organizations.

Competitiveness depends on productivity, and productivity depends on how well humans can use the tools of work. As those tools get more complex, skills must rise. Increasingly, the objective in HR planning is not labor, rather it is labor with certain critical KSAs. In the United States, numerous reports lament the relative decline of necessary skills levels among the Nation's youth; global outsourcing for needed skills – white-collar as well as blue, professional as well as trade – exists not only for obtaining skills at a lower cost but also because it is the only way to obtain those skills at all.

When a company faces a shortage of requisite KSAs, something must be done. The company must increase or enhance its recruiting, increase or enhance its training of the existing workforce, outsource for needed skills, alter demand patterns for its goods and services (demand management), forego all or some of the operations that depend on the needed KSAs (and thus the ensuing output goods and services that emanate from those operations), or continue to serve customers without having the KSAs that are required. The last option raises serious questions about quality, safety, responsiveness, costs, and workforce fatigue (and other issues). Cessation of operations can produce direct and immediate revenue decline; demand management can be unpopular because of the short-term disruptions in workflow and potential loss of profitable customer base, and outsourcing has negative short- and long-term effects on local economies and potential long-term effects on company supply lines. That leaves recruiting and/or training.

Recruiting or training might be viewed as a human resources “make or buy” issue. In manufacturing, the “make” option – analogous with the “training” option in the metaphor, often carries hidden costs and unforeseen difficulties. The preparation steps necessary to “make” are full of pitfalls and demand an instantaneous acquisition of knowledge, skills, and abilities. Very few companies successfully enter the “make” arena unless the requisite KSAs are already largely in place. And even then, costs can be substantial. Moreover, as product and service life cycles decrease, the ability to recover capital expenses associated with startup diminishes. For these and related reasons, the “buy” option frequently looks increasingly attractive.

But the “buy” option has its own problems. Recent attention to development of reliable supply chains has been quite significant. Integrating supplier capability with buyer requirements is anything but a simple matter. Volumes have been written on supplier selection, yet even large OEMs find themselves having to look elsewhere for needed items. Considerable company resources are expended just to maintain flow lines for existing needs to say nothing about future needs.

When skills are the sought-after resource, the issues raised in the make-or-buy discussion remain; just the terms and bodies of literature change. Moreover, when the buyer is a smaller firm, the economic consequences of mistakes are exacerbated... company demise can easily be the consequence of inattentive management, whether in manufacturing or in services. Another problem exists in the skills acquisition situation: Need is not always readily apparent. Finally, even if the “right” decision is known, the

smaller business owner or manager must typically see to enhanced training and/or recruiting with minimal staff assistance.

Given the importance of small business in the U.S. economy, one would suspect that the adequate supply of skilled employees for those firms would be atop the list of commercial priorities. A study from the U. S. Chamber of Commerce suggested that the shortage of skilled labor is most pronounced in the Midwest (Buss, 1996). Unfortunately, little is known about how well off small businessespeople really are when it comes to the human resource component of their capacity. This study aims to address some of the more prominent questions. Specifically:

Are there significant KSA shortages among small business? How aware are small business managers of KSA shortages that do exist? How do they monitor current and future needs and availabilities? What skills are most critical to small business survival and/or accomplishment of mission? What actions are SBE managers willing to take should future shortages emerge? Are KSA acquisition programs formalized? Are they budget lines in company plans?

The rest of the paper is made up of the following sections: Literature review, methodology, empirical results, and discussion and conclusions.

## **LITERATURE REVIEW**

Labor shortages constrain economic growth (Buss, 1996). Concerns about impending labor shortages have been voiced for over a decade (e.g. Johnston, 1992). Human resources create the intellectual capital of an organization, and increasingly, that capital determines the market value of the organization and ultimately the competitive success as well. Likewise, the economic advancement and social progress of a nation is contingent upon the skill level of its human resources. At one time, the key to any nation's future was its natural resources, but perhaps that time has passed. Today, the human resources dominate the assets column in competitive nations. As is the case with global businesses, the quality and number of a nation's skilled people now determines that country's likely prosperity or decline (Adler, 1992).

Approximately 70 million workers from the so-called baby boom will retire, or at least reach retirement age, before 2018. This is a significant demographic factor affecting the availability of qualified human resources, or impending lack thereof. This group constitutes about 60 per cent of what both employers and economists call the prime-age workforce—that is, workers between the ages of 25 and 54. (Kaihla, 2003). Only 40 million new workers are expected to enter the workforce during the same period, too small to take their place, much less fill newly created positions. (Fisher, 2003).

Evidence of worldwide shortages of skilled human resources in certain industries continues to build. In the United States, there is a general consensus among private and public sector analysts that the demand for skilled workers in today's global economy has been outpacing the supply, and that this situation will continue to grow as the millennium continues to evolve. The U.S. Department of Labor has projected that by 2010, U.S.

companies will face a shortage of more than 10 million employees (Fisher, 2003). Others have projected that a shortage in the 10-million range will occur several years sooner, perhaps as early as this year (Herriott and Torrey, 2003). Without wanting to argue the accuracy of former predictions, the fundamental message is that the shortage exists and is growing. Shortages of skills could threaten competitiveness, a point which has already been argued in the realm of information technology skills. (Hoffman, 1998).

Clearly, this trend will have a disproportionate negative impact on small businesses, and therefore, economic development. Skilled employees contribute intellectual capital, are critical components of company value, and thus link to competitiveness. Global competition and the emergence of new jobs, especially those in technical fields, are factors that have significantly exacerbated the skills shortage. Larger organizations are beginning to recognize long-term impacts, and there is record high investment in corporate training and management development. Larger companies are much more likely to use all types of external organizations for training than small businesses. Small firms' source of training is generally an in-house program at the unit / departmental level. The limited research on small business' participation in training initiatives indicates that they do not get involved in external training initiatives, in spite of governmental policy initiatives designed to assist these endeavors (Devins and Johnson, 2003).

While the issue of the impending labor shortage is receiving global press coverage and increasing levels of interest, existing research is dated (most of it was performed in the early 1990s), predominately oriented towards larger employers, and focusing on the anticipated workforce rather than on the employer. Relatively recent publications still rely on data from over 10 years ago. While interest in this issue is emerging (e.g., Shane and Knod; 2004, Diebolt and El Murr; 2003,) there has been very little information focusing on the small and medium-sized enterprises (SMEs). The scant amount of research looking at Human Resource practices of SMEs has addressed the formality of their processes and changes to these processes as the firm grows. (Nguyen & Bryant, 2004). This research has shown that while the processes may become formalized for employees with firm grows; the managers tend to remain informal (Kotey & Slade, 2005). This pattern parallels the research evidence pertaining to SME planning. Entrepreneurs and SME managers tend to avoid formal planning (Kern, 2002), preferring informal plans and processes (Penn *et al.*, 1998). SMEs exist in all types of businesses and industries and contribute to the economic development of a nation. In the current capital, technology-intensive manufacturing and service industries, workforce skills level and availability are important to the growth of SMEs. A challenge for SMEs is the labor/skills shortage.

In a 2009 skills shortages study, the author points out major changes in both structure and function, and that specific training produces competitive advantage to firms that utilize the training (Smith, 2009). Some of the causes of skills shortages in the U.S. are in technical occupations due to advances in technology. There are inadequate skills in certain machining applications (Penton, 2010). Another concern is the outsourcing of low-skilled jobs to low-labor-cost countries..., the remaining jobs require a much higher skill level, and the average has gone up in terms of the amount of training needed per

employee (Penton, 2010). One of the vehicles for SMEs mitigating labor shortages is the use of migrant workers (Guildford, 2007). This approach has become a politically sensitive issue. Furthermore, regulatory action imposes additional burden on employers, reducing its viability as an option. There have been arguments that regulatory restrictions to immigrating labor (even for specific skill sets) are aggravating the labor shortages impact on SMEs (Guildford, 2007, Phillips, 2008).

Research has shown that networking is one method employed by SMEs in response to shortages (Sherer, 2003), however this does not address the shortage, and it addresses the migration of workers from one firm to another. Rather than resource development, this reflects a resource hoarding behavior. Small companies have more difficulty filling certain positions than larger firms. The lack of skilled workers has impacted businesses in many ways. According to a report from Maryland Business Roundtable for Education (Hollander, Cohen & McBride, 2001), the majority of those affected have lowered their level of operation and productivity. The authors are also mindful that many of the remedies available to large business firms or prescribed by the literature are not feasible to the small business firms because of their resource constraints. For these reasons, the scope of the inquiry was intentionally left general, to ascertain the unique SME perspective.

## **METHODOLOGY**

Semi structured interviews were conducted with key senior management and/or ownership personnel from 76 small businesses and entrepreneurships. Fifty-one of the companies operate in the Midwest, specifically in the Mississippi River corridors of Illinois and Iowa. The remaining 25 respondents are located along the Atlantic seaboard in the Eastern Virginia area. Respondents represent 10 diverse industries, with relatively more respondent concentration in professional services, manufacturing, professional services, and construction. Exhibit I illustrates participation by industry.

**Exhibit I**  
**Respondents by Industry**

<i>Industry</i>	<i>Frequency</i>	<i>Percentage</i>
Professional services	18	23.7
Retail	11	14.5
Consumer services	5	6.6
Guest services	3	3.9
Agriculture	1	1.3
Manufacturing	18	23.7
Construction	10	13.2
Transportation	3	3.9
Healthcare	5	6.6
Not-for-profit (e.g., government)	2	2.6
	76	100.0

Respondents were asked to identify themselves, state their company positions, indicate the primary industrial classification for their firms, and supply the number of employees in the company. An open-ended item explored how the small business firm was monitoring the labor market. Interviewers were prepared to assist less forthcoming or hesitant respondents to this item with prompts about professional or organizational networks such as trade associations or chambers of commerce, informal networks, information from colleagues, intuition, and so forth. Another open-ended item served to close each interview; respondents were asked if there were any other comments regarding the topic of skills shortages. A Yes / No item indicated whether or not the company had and maintained policies and procedure for preparing formal needs and availability budgets for human resources.

The other questions focused more narrowly on respondents' experiences with hiring difficulties, the relative importance of different skill sets for their small business firms, their perception as to whether or not there was a shortage of employees with requisite knowledge, skills, and abilities (KSAs), and on their current and intended future responses to those perceptions. Those items asked respondents to indicate:

- The extent to which the company is currently experiencing shortages of people with specific (named) knowledge, skills, and abilities.
- The extent to which the company relies on each of a (specified list) set of remedies to alleviate any KSA shortage.
- The current importance of each type of skill (from a specific list) to the company.
- The projected or anticipated availability and cost of each type of skill (again, from a list of specific skill types) needed to maintain or increase company capacity for meeting demands.
- The likelihood that, should the company face critical skills shortages, certain remedy options (from a specified list) would be undertaken.

The interviews were conducted by graduate students under the supervision of the principle author (for the Mississippi River corridor), and under the supervision of one of the co-authors (for the Atlantic Coast area). Interviews were scheduled in advance and conducted at a location and time convenient to the interviewee, generally at their places of business and lasting approximately one-half hour.

## **EMPIRICAL RESULTS**

Results from this exploratory inquiry shed light on several of the research questions noted in the earlier sections of this paper. Additional data is being collected by the authors as part of a long-term study and might certainly cast a different light on these tentative findings. At this juncture, given the limited data set, all analysis has been conducted on the data set as a whole; there has been no attempt, for example, to compare midwestern respondents with east coast respondents. That issue, and related others, must wait. Finally, due to the exploratory nature of this research, both qualitative and quantitative interpretations of the interviews provide insight.

### KSA Shortages in General

Respondents indicated the degree to which their companies were currently experiencing shortages of people with appropriate knowledge, skills, and abilities with a Likert-type (ordinal) response: Never, rarely, frequently, or constantly. Exhibit II shows the frequency of each response and serves as a general overall indicator of the current KSA shortage problem within small businesses.

**Exhibit II**  
**KSA Shortage Problems (Experienced)**

<i>Degree to which KSA shortages are experienced</i>	<i>Count</i>	<i>Percentage</i>
Never	7	9.2
Rarely	25	32.9
Frequently	28	36.8
Constantly	16	21.1
Totals	76	100.0

The fact that 57.9 per cent of respondents experience KSA shortages either frequently or constantly suggests that skill shortages are already a real problem for small businesses. Although several respondents identified specific skill shortages (e.g., machining, accounting, marketing), the overall results suggest that shortages are probably more generalized. The authors performed a cross tabulation analysis of the reported degree of shortages (Exhibit II) with the industry types (Exhibit I). A chi-square test of independence revealed no support for any relationship between type of industry and KSA shortages ( $X^2, df 27 = 26.56, p = 0.49$ ). Thus, we tentatively conclude that the KSA shortage problem might be expected to affect small businesses across a wide cross section of industries.

Respondent commentary on the open-ended items provides a rich collection of qualitative data. While personnel from some responding small business firms indicated that they have “no difficulty in finding the people we need” (a comment from a manager at a non-profit agency), or voice a lack of concern because “the union supplies our needs,” there does appear to exist overall anxiety about skills shortages. The concerns are expressed using a variety of words, such as “critical shortages,” (from a long-term care facility manager), “scarce,” (from an owner of a veterinary / animal hospital), “severe shortage” (from a manager at a trucking company). [The lead author is reminded of a small robotics-welding firm with 50 employees that revised its employee selection process a few years ago. The company abandoned its requirements for education and experience, and according of the human resources manager, if an applicant was breathing, he or she was offered a job.] While it might be easy to consider such a reaction as unique, the present study suggests that small business firms across a variety of industries are experiencing similar circumstances.

Responses to open-ended questions are replete with comments pertaining to shortages of people with hands-on-skills, deficiencies in critical thinking abilities, and needed

interpersonal skills. Somewhat reminiscent of the robotic firm, several of the responding small business firms indicated that they hire people that do not meet qualifications and instead rely on training to instill necessary skills. As one manufacturing firm manager indicated, “We have yet to find anyone in the area with the skill set we need to start off as a contributor.”

Another of the research questions pertains to the nature of skills (or knowledge and abilities) that are deemed “critical for company survival” or at least “important” for the firm’s ability to carry out its mission. Exhibit III illustrates the relative degree of importance that respondents attached to a specified list of KSA areas.

**Exhibit III**  
**Relative Importance Attached to Various Skill Areas**

Importance to Firm	Skill, Knowledge, or Ability Category							
	Basic Science	Basic Comm.	Math - Quant	Inform. Techn.	Interp. Ldrship	Critical Think	Strategic	Functional*
Not necessary	25	1	2	20	3	9	17	5
Of limited value	25	10	11	24	11	4	15	9
Important	22	25	40	18	39	33	28	34
Critical for Survival	4	40	23	14	23	30	16	19

Four of the skill areas have been highlighted in Exhibit III. Over 80 per cent of respondents stated that basic communications skills, basic mathematics and quantitative skills, interpersonal leadership skills, and critical thinking skills were either *critical* or *important*. Comparable ratings for strategic skills (58%), information technology skills (42%), and basic science skills (34%) relegated these three categories to a level of somewhat lesser importance in the minds of the respondents.

The skill area labeled “functional” represents a skill that is more or less company or industry specific (e.g., machine tooling, laboratory skills, or patient care), or a more universally needed skill area that was not listed specifically on the survey list but was deemed important or critical by respondents (e.g., marketing, purchasing, or accounting). Most respondents (67 out of 76) did volunteer one or more of these additional functional skills and that information could assist in refinement of future research. Finally, we note that 70 per cent of respondents considered one or more of the functional skills to be either *critical for survival* or *important*.

### Responses to Perceptions of KSA Shortages

With nearly 60 per cent of respondents reporting a frequent or constant KSA shortage, the inquiry shifts to what those companies are currently doing about the shortage, and also as to what they plan to do about it in the future. The relationships between perceived skills shortages and (1) current responses to those shortages as well as (2) potential future responses to those shortages are somewhat mixed as to the likelihood that a given response activity is being or will be followed.



Respondents were presented with an array of options for dealing with or responding to skills shortages and asked to indicate whether their companies currently used each option *constantly, frequently, rarely, or never*. Ordinal data correlations (Spearman's  $r_s$ ) between the degree of shortage experienced (See Exhibit II) and strength, or intensity, of action on various types of response are summarized in Exhibit IV.

**Exhibit IV**  
**Relationships of Shortages Perceptions to Current Responses**

<i>Current Response</i>	$r_s$	<i>Significance of relationship (with shortages perception)</i>
Outsourcing	0.024	0.841
Additional training for current workforce	0.304	** 0.008
Recruiting new permanent or full-time employees	0.336	** 0.003
Recruiting new temporary or part-time employees	0.266	* 0.021
Overtime or utilization of extra shifts	0.261	* 0.025
Other option(s). +		

+ Only four respondents indicated that other options are being used, too few for meaningful comparison.

Contents of Exhibit IV suggest that there is a positive relationship between skills shortages perceptions and efforts to increase training for employees, to recruit both full-time (permanent) employees and part-time (or, temporary) employees, and to engage in overtime and/or extra work shifts. However, there is no significant relationship between the degree of skills shortages perceived and tendency to engage in outsourcing. A tentative explanation might include a general negative opinion of outsourcing *per se* in light of its association with loss of jobs. The very low (4, or 5.3%) response rate to the “other options” item is evidence that company principals either felt that the listed response options sufficiently covered the scope of their efforts or were unwilling to reveal other steps that they are taking to alleviate shortages.

Respondents were also asked to indicate how their companies might face a future critical skills shortage. Specifically, they were to indicate the likelihood that their firm would engage in any of a set of possible activities by responding with one of the following choices:

- This is likely to be the preferred option
- We would do this, but we have not yet done so.
- This option would be unlikely.
- My company would not do this.

Ordinal data correlations (Spearman's  $r_s$ ) between the degree of shortage experienced (See Exhibit II) and likelihood of action on various types of possible future response are summarized in Exhibit V.

**Exhibit V**  
**Relationships of Shortages Perceptions to Possible Future Responses**

<i>Possible Future Response</i>	<i>r<sub>s</sub></i>	<i>Sig. of relationship</i>
Recruit personnel with skills we need from a client or customer	0.079	0.500
Recruit personnel with skills we need from our suppliers	0.352	** 0.002
Increase general recruiting, but not target customers or suppliers	0.290	* 0.012
Increase budget and efforts to develop in-house training programs	0.071	0.542
Secure formal contracts with schools to provide needed skills	0.179	0.124
Secure agreements with employees for extended overtime	0.369	*** 0.001
Phase out operations that require the skills in which we are short	0.064	0.591
Other option(s). +		

+ Only seven respondents indicated that other options might be used, too few for meaningful comparison.

Exhibit V data suggest a very strong positive relationship between the intensity of perceived skills shortages and the likelihood that the firm will work to secure contracts with employees that make extended overtime more feasible. This finding is not surprising given that overtime is among the least risky avenues for capacity enhancement; the existing workforce is knowledgeable, in place, and at least somewhat loyal to the firm. Also, for small business owners, long hours are the norm rather than the exception, so paying employees to work longer hours has a sense of normalcy about it.

Strength of perception of skills shortage is also positively related to the likelihood that the firm will recruit skilled personnel from suppliers and will increase general recruiting that is not targeted to customer or supplier workforce personnel. The option to phase out operations that require needed skills produced interesting results: Fifty-four respondents (71%) said their companies *would not* phase out operations if faced with skills shortages and another 15 (20%) said their firms would be unlikely to do so. Thus, over 90 per cent of respondents say they would stay the course and intend to continue providing goods and services even if facing a shortage of the skills necessary to do so.

### **Perceptions Regarding Future KSA Shortages**

Respondents' unwillingness to phase out operations that require critical skills that are lacking in the company raises several questions, some of which are at least partially addressed by respondents' open-ended responses. An immediate "reality-check" arises: How do these small business firms envision continued operations without skilled personnel? Several of the companies rely on labor unions to supply workers and don't

appear to have considered the decrease of new entrants into the trades. Other managers or owners admitted to accepting less-than-qualified employees. One must wonder about the resultant impact on the quality, efficiency, and competitiveness of those firms. Several respondents indicated an awareness of impending difficulty, but imply that it is not important to them now although company growth may bring KSA shortage into sharper focus.

Throughout the respondent small business firms, there seems to be no great sense of either urgency or perhaps permanency regarding skills shortages. Some of the small business firms do not anticipate growth, and have experienced stability in their current workforce. For those respondents, there is no shortage, and they believe that any cries of impending labor shortages do not apply to them. This might explain why responding small business firms do not anticipate the necessity for drastic steps (such as ceasing certain operations) in current business. Perceptions about the likelihood of being able to acquire each of the types of skills listed in Exhibit III were gathered, and summary findings are shown in Exhibits VI and VII.

**Exhibit VI**  
**Perceived Difficulty in Acquiring Skills in Future**

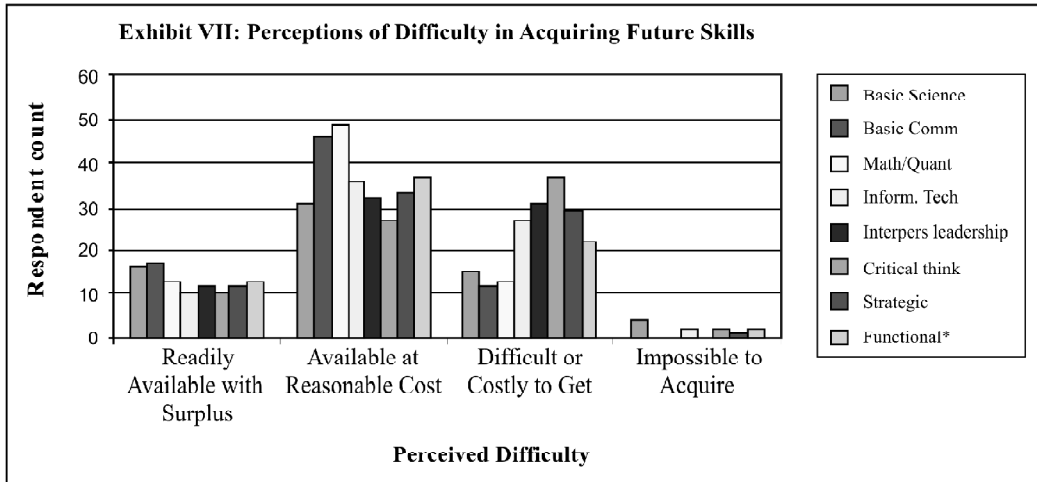
<i>Skill will be ...</i>	<i>Basic Science</i>	<i>Basic Comm.</i>	<i>Math– Quant</i>	<i>Inform. Tech</i>	<i>Interp. ldrship</i>	<i>Critical think</i>	<i>Strategic</i>	<i>Functional*</i>
Readily Available with Surplus	16	17	13	10	12	10	12	13
Available at Reasonable Cost	31	46	49	36	32	27	33	37
Difficult and / or Costly to Get	15	12	13	27	31	37	29	22
Impossible to Acquire	4	0	0	2	0	2	1	2

*Note:* Columns do not all sum to 76 due to omitted responses; a response of “not applicable” meant the skill was not sought.

Exhibit VI shows that very few respondents consider any of the types of skills listed in Exhibit III as likely to be *impossible* to acquire. Given the exploratory nature of the present study, perhaps any consistency of beliefs concerning ease of future acquisition across skill types may be assessed appropriately in graphical form. Exhibit VII contains a bar chart presentation of the data in Exhibit VI.

Exhibit VII illustrates the rather consistent *collective* agreement among respondents across the eight types of skills for the categories of *readily available with surplus* and *impossible to acquire*. The relative “flatness” of the bar heights for all skill types in these two categories suggest little variation in the number of respondents who believed a particular skill to be either *readily available* (range 10 to 17 respondents; average 12.9), or *impossible to acquire* (range 0 to 4, average 1.4).

There is less consistency among respondents as a group regarding skills that are thought to be in the two intermediate skills acquisition categories, *available at reasonable*



cost and *difficult or costly to get*. The first of these categories exhibited the greatest variation (range 27 to 49; average 36.4) in the number of respondents who categorized the difficulty of obtaining a needed skill as available at a reasonable cost. Skills viewed as *difficult or costly to get* exhibited slightly less variation in the number of respondents (range 12 to 37, average 23.3). Critical thinking skills, and to a lesser extent interpersonal leadership skills, were top contenders in the *difficult or costly to get* category, while basic mathematics and quantitative skills followed closely by basic communications skills were the KSA types most often rated as *available at a reasonable cost*.

### Effects of Formal Budget Processes

In an effort to gain some (arguably) more tangible insight into just how serious the companies represented by respondents are about acquisition of critical KSAs, a “yes / no” item inquired as to the existence of a *formal* (formality of process was emphasized during interviews) needs and availability budget for human resource needs. The authors hypothesized that having a formalized procedure to analyze small business firm needs and a plan *and budget* for acquisition of critical KSAs would signal a more definitive commitment than merely having a plan to do so. Fifty-two of seventy-four (70%) respondents to this item indicated that their firms did *not* have a formal planning and budgeting process for this purpose in place.

Moreover, the expressed (perceptual) existence of a formal planning and budgeting program does *not* appear to be related to either (1) the degree of company engagement in any of the current efforts (options) to acquire needed skills (Refer to list in Exhibit IV), or to (2) the likelihood of engaging in any of the possible future responses should critical KSA needs arise (See list in Exhibit V). In other words, when it comes to various techniques for acquiring critical KSAs, respondent small business firms are either “doing” or “not doing” regardless of whether or not the actions can be tied to strategic intent or to specific budget lines.

The finding regarding the (relative lack of) existence of formal budgeting opens the door to a broader issue: When it comes to managing the critical skills component of company capacity, just how sophisticated are small business managers? How well are they performing when it comes to awareness of critical skills needs and in their responses to those needs?

### **Managerial Awareness and Performance**

The principle mechanisms used by respondents to monitor the labor market are their personal and professional networks, including relying on associations, temporary agencies and even competitors for signals of impending shortages. In one sense, relying on networks is typical behavior for entrepreneurs; on the other hand, depending on others to provide reliable information about a critical resource is contrary to the resource-based view of the firm. Under this framework, any critical resource will be guarded (hoarded) rather than openly shared. Therefore, small business firms that rely on networks to provide signals of impending shortages may get the information late. The timeliness (or lack of it) of the monitoring process is further demonstrated by the number of firms in the present study that indicated their primary labor market indication was response rates to their ads. One could argue that such behavior suggests reactive rather than proactive management.

Another somewhat unexpected hint of managerial weakness (or at least, underperformance) among small business firm owners/operators emerged from the interviews. Several respondents seem to be overly shortsighted, focusing on short-term, operational issues to the exclusion of long-range planning. Moreover, some respondents openly admitted weaknesses in the management of skills acquisition. As one responded stated, "Only we don't know what the next step will be." (From a retail manager) A general review of the interview commentary suggests that small business owner/managers might be insufficiently aware of the managerial KSAs required to perform strategic planning and respond to changing labor market conditions. In short, the small business firms are not aware of what they don't know. They are focusing predominately on their current situation and not looking into the future.

The short-term or near-term focus can be understood when one considers the operational reality of entrepreneurship and managing an SME. The small business manager is both a productive worker and manager. The nature of entrepreneurship calls for the manager to spend the majority of time with operational issues at the sacrifice of strategic planning. Growth brings new challenges, however, and the skills needed to successfully manage a growing, functionally structured business are significantly different (Solymossy and Penna, 2001). While previous studies have identified migration of managerial personnel from large business firms to small business firms (Gendron, 1999), the present data provide some indication that the migration might also be between similarly sized and positioned firms. One respondent unabashedly admits to actively recruiting managerial personnel from their competitors.

## DISCUSSION AND CONCLUSION

This research, though exploratory in nature, does lend support for the contention that small businesses are indeed facing critical KSA shortages. Moreover, the study data show no evidence that KSA shortage is confined to a particular industry. Our tentative suggestion is that the shortage is widespread among small businesses, perhaps affecting all industry segments. Verification of this dispersion of shortages and investigation of the degree of impact across segments appear to be viable research agendas.

While the original intention was to discover the perceptions of *impending* skill shortages and intended strategies, it is meaningful that the study results suggest (1) that small business firms *are already* experiencing such shortages and readily admit so, and (2) that the responses to current and anticipated (impending) shortages are different than what one might anticipate.

For example, when we consider the issue of a formal planning and budgeting program for acquiring critical KSAs, what appears to be a notable paradox emerges: First, approximately 60 per cent of the firms investigated have experienced frequent or constant problems finding people with appropriate skills. Second, depending on the skill area, from 16 to 52 per cent of the respondents indicate the likelihood of a skill being either impossible or difficult and costly to acquire. Third, from 34 per cent (for basic science) to more than 80 per cent (for four of the examined skill areas) of respondents considered the KSA as either critical for company survival or at least important to the attainment of the company mission. Any one of those three conditions should motivate firms to engage in proactive KSA acquisition planning and budgeting; yet only 30 per cent of the responding small business firms do so.

Although 23 responding small business firms do indicate a formal process, the level of sophistication could be questioned. One respondent's notes might be another respondent's formalized plan, since the strategic and managerial processes of entrepreneurs tend to be unique to each entrepreneur's personality (McCarthy, 2003). Entrepreneurs are known to avoid formal planning (Kern, 2002), preferring informal plans and processes (Penn et al., 1998) and some have even been characterized as "flying by the seat of (their) pants." (Salter, 2004).

The apparent lack of managerial awareness among the current sample of small business firm respondents as to *what one might do in order to alleviate KSA shortages* is of great interest. It suggests that the skill shortage might well rest within the domain of the small business owners and managers; perhaps more significantly than within the labor market itself. Although a shortage of managerial skills in SMEs has been suggested (Industrial & Commercial Training, 1995), it does not appear to have been explored through research.

Responses to the present survey also suggest shortsightedness. While a strong majority of the firms have already experienced critical shortages, they apparently don't equate the skill shortage as having an economic cost to the firm. There seems to be an expression of need for the skills, absent of a willingness to pay for them. Believing that there will be

difficulty in obtaining people with the necessary skills, but believing that they can be acquired at a reasonable cost indicates naiveté.

Another somewhat troubling indication concerns the nature of possible future efforts to acquire skills. The small business firms indicate increasing intensity of current efforts – or what could be expressed as a “try-harder-attitude,” as opposed to a “try-something-new” attitude. In one sense, this demonstrates entrepreneurial tenacity. On the other hand, it is troubling because it appears to contradict the entrepreneurial characteristics of innovative behavior. At what point of time does determination to “stay-the-course” become harmful to the future of the firm?

Regarding the relative importance attached to various skills, some comments are in order. First, an overwhelming proportion of respondents consider basic communications skills, basic mathematics and quantitative skills, interpersonal leadership skills, and critical thinking skills as either critical for survival or important to the company mission. This suggests that these KSA areas are foremost in the minds of small business managers. While there is evidence of a general concern in our society about deficiency in these skills, it is interesting that the small business respondents express far greater concern over these skills than has been demonstrated by previous research with large business firm research. One explanation for this could be that employees of small business firms are expected to perform multiple tasks and multiple functions. Therefore, any weaknesses will be having a higher proportionate impact on the firm than might be experienced by a large firm. Even though current respondents placed less importance on basic science, information technology, and strategic skills, relegation of these latter three skill categories to less-than-equal emphasis at this point seems premature.

We note that previous studies (e.g., Haskel & Martin, 2001; Hawley & Raath, 2002) place information technology skills and strategic skills in somewhat higher importance than did the respondents in this study. There are several possible explanations for this difference. The number of employees with the more advanced technological and strategic skills in a small business firm is low; frequently these are the skill sets of the manager or owner of the firm. The small business perspective *might* be acting to downplay these skills in the eyes of respondents. SME firms are niche focused, and *may* not require their employees to demonstrate the depth and breadth of information technology skills sought by large employer respondents of previous research. The matter of whether or not this difference can be generalized to the entire SME community, and if so, investigation of the reasons for any variance from conditions found in larger-companies provide fertile opportunities for further inquiry.

While anticipated shortages of qualified personnel do appear to be real, the effects upon the firm need not be negative. The first step requires recognition of the needs of a growing enterprise. Many of the prescriptive remedies offered by the literature (e.g., increasing pay levels, increasing recruitment efforts and retention rates [Johnston, 1992]) are not as available to SMEs because of their resource constraints. The most significant shortage facing SMEs could well be the lack of a managerial awareness of the knowledge, skills and abilities necessary to grow the firm. The personal attributes and skills used to

initiate a venture are different from those that are required to move the organization to a growing, functionally structured enterprise (Solymossy and Penna, 2001).

Entrepreneurs initiate their ventures by creative innovation under conditions of risk. Entrepreneurs must continually manage the growth of their firm with innovative management. As demonstrated by some organizations, this can take the form of employee empowerment (e.g. Leonhard Plating Co.), strategic alliances to share resources (Kenton County Airport Board and Cincinnati / Northern Kentucky International Airport), utilization of automation software (e.g. Kendle), tapping alternative labor markets such as stay-at-home mothers (The Payne Firm), or using college students in an internship program. (Schafer, 1997).

Drawing on the themes and relationships suggested from this exploration, the authors are developing a general model to guide our subsequent research efforts. Presentation, testing, and discussion of that model, however, are beyond the present scope. Clearly, the major impediment to more thorough analysis in the present study is the limited data set. More powerful parametric and nonparametric statistical analyses must await the growth of the database. Comparisons of critical skills perceptions and responses across industry types, geographical regions, and degree of aggressiveness in seeking needed talent are among the more general types of analyses planned for the future. Future surveys also add the potential for longitudinal studies as well. The present study does highlight, however, the existence of skills shortages and suggest marked differences in perceptions and responses between small business firms and those of previously researched large business firms.

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