

CRB

The Careers Project

Survey of Representatives of Business and Industry in California

By Patricia L. de Cos

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CALIFORNIA RESEARCH BUREAU

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**Survey of Representatives of Business
and Industry in California**

By Patricia L. de Cos

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Internet Access

This report is part of a series of Careers Project reports that are available through the Internet on the California State Library's home page under CRB Reports (www.library.ca.gov/crb). Other Careers Project reports include:

- *The Careers Project: School Survey of Middle and High School Principals and Counselors in California*
- *The Careers Project: An Economic Analysis of Ten Industry Clusters in California*
- *The Careers Project: Focus Group Perspectives on Provisions for Career Exploration and Development Opportunities at Selected Middle and High Schools*
- *The Careers Project: A Summary with Policy Options*

Executive Summary

The Careers Project is a study of the preparation all students in public middle and high schools receive to explore career options and the relationship between that preparation and California's state and regional economies. The California Research Bureau (CRB) undertook this research at the request of a bipartisan group of members of the California Legislature, with funding support from the James Irvine Foundation. The study consisted of three distinct phases:

1. A statewide survey of middle and high school counselors and principals.
2. An economic analysis and survey of representatives of business and industry in California.
3. School focus groups.

In each of the three study phases, the CRB research team utilized the nine economic regions defined by the California Economic Strategy Panel of the California Labor and Workforce Development Agency as a framework for capturing the diversity of the state. *

In this report, we discuss the second phase of the study, which involved two parts: an economic analysis of ten industry clusters and a survey of representatives of business and industry. † The information gathered from the economic analysis was used as the basis for launching a survey of representatives of business and industry in four industry clusters including:

- Basic Information Services (including Telecommunications and Publishing)
- The Manufacturing Value Chain (including Logistics, Production, and Design)
- Health Science and Services
- Retail Trade

* Please refer to Appendix 1 for a map describing the nine economic regions.

† The economic analysis was based on information provided in the base reports for each of the nine economic regions of the state as defined by the Economic Strategy Panel. Using labor market information projections through 2014 of the California Employment Development Department's Labor Market Information Division, our analysis identified: the fastest growing and largest occupations, their corresponding required job skills, and their average annual salaries for ten industry clusters.

The survey's three main objectives were to:

1. Determine what involvement businesses have with their local public K-12 schools.
2. Verify government-collected information regarding the fastest growing and largest occupations in California through 2014 and their corresponding job skills.
3. Identify any emerging trends that may not be captured by the economic data currently available.

The CRB research team identified the two largest employing subsectors within each of the four industry clusters across the nine economic regions of the state, for a total of 25 industry subsectors, and then selected representatives of those industries to survey, by searching for California-based associations and receiving recommendations from various individuals. We contacted 111 employer associations and sent them an electronic survey, which resulted in 75 responses. The survey responses are considered descriptive since the CRB research team used a targeted selection process.

Employers participating in the survey were either affiliated with an association, trade group, or represented their own firm. Of the respondents representing an association or trade group, 20 percent represented more than 500 companies and another 20 percent represented 101-500 companies. For those respondents representing their own firm, about 20 percent employed more than 500 employees.

BUSINESS PARTNERSHIPS WITH SCHOOLS

Employers were first asked to provide their opinions regarding a state law requiring local school boards to offer a course of study to prepare middle and high school students for the opportunity to attain entry-level employment (Education Code § 51228 (b)). About half of the responding employers reported that existing educational programs are either inadequate or do not prepare students at all for employment in their industries. Forty percent of respondents thought that existing programs somewhat prepare, while only three percent thought that existing programs somewhat prepare, while only three percent thought that students were well prepared to work in their industries.

Business/Industry Views on How Well Educational Programs Prepare High School Students for Employment	
Response	Percent
Not preparing students at all	16%
Inadequately preparing students	31%
Somewhat preparing students	40%
Preparing students very well	3%
Don't Know	3%
No Answer	8%
Total	100%
Source: <i>Survey of Representatives of Business and Industry</i> , CRB, 2008; N=75.	

Several themes emerged from the comments that respondents offered to explain their opinions. These included:

- Students do not have the necessary skills to perform the work.
- The quality of education varies considerably among schools.
- While the nature of jobs has changed, the educational system has not.
- Some industries do not expect high school students to be prepared for entry-level positions because critical jobs require post-secondary education; other industries offer extensive entry-level training.
- Experiential learning (i.e., career and technical education) is lacking in public schools because of a focus on theory.
- Students are not taught “why” they need to have basic skills nor are they exposed to important industries existing in California (i.e., health, agriculture, engineering, and architecture).

About three-fourths of the responding employers have some form of partnership with middle or high schools. Only three percent had worked with an intermediary organization to assist in partnering with public schools (such as a one-stop career center, local workforce investment board, chamber of commerce, local economic development agency, trade association, or county office of education). The most frequently cited type of school partnership involved participation in “career days” or as “class speakers.” Of the respondents who could recall how their business-school partnerships had initially formed, the majority evolved from philanthropic gestures.

The majority of respondents who had experience with a school partnership viewed their partnership as beneficial or very beneficial to their firms or the firms they represented. The two most cited benefits were:

- The opportunity to build good will and visibility in the community (80 percent).
- The opportunity to train potential future employees in the skills needed (64 percent).

The majority of respondents also believed that their partnerships with public schools were beneficial or very beneficial to students primarily because “students gain an understanding of the industry they may be interested in working in” and “they provide opportunities for students to explore their career interests.”

Respondents who felt that school partnerships were not beneficial at all or somewhat beneficial to their firms or to students stated the main reason was a lack of staff resources that restricts their ability “to work with students” and a lack of school staff to “provide sufficient assistance to support the program.”

For respondents who had not established a partnership with public middle or high schools, the three most prevailing barriers were:

- 1) The work is not suitable for middle and high school students, so employers must recruit from four-year universities (89 percent).
- 2) A lack of staff at firms to initiate the effort of working with schools to recruit students (78 percent).
- 3) A lack of information or interest (61 percent).

Some employers elaborated in more detail about existing barriers for partnering with schools:

- “I mention again the controversy that surrounds the meat industry. Animal rights activists raise tension levels and make schools fearful.”
- “Work is complicated [and] often requires licensing with special educational background. Mostly we just don’t think about reaching out to this age group.”
- “Asking members ... to volunteer more time to outside interests does not bring many volunteers. Some ... member employers have their own outreach to high schools.”
- “Frequently, the businesses associated with [our association] are one-person operations, perhaps contracting out specialties such as typesetting or graphics or editing. Those roles require professionals.”

CALIFORNIA GOVERNMENT DATA ON FASTEST GROWING AND LARGEST OCCUPATIONS AND JOB SKILLS

The survey posed a series of questions about the CRB’s economic analysis of the fastest growing and largest occupations in California through 2014 and their related job skills. While the questions were tailored depending on the jobs and skills required for each industry, the *content* of the questions was identical.

Fastest Growing and Largest Occupations

A majority of the respondents agreed with the CRB’s list of the fastest growing and largest occupations in their industries. The survey then asked these respondents to identify the job classifications that would provide the most jobs, were the most critical for growth in their industry, and would experience the greatest labor shortages. The CRB research team found some commonality in their responses. For example,

- Employers in the Health Science and Services industry identified registered nurses, physicians, technical lab workers, pharmacy, and radiology jobs.

- In the area of Logistics, freight and truck drivers were identified in each category.
- In Manufacturing Production, maintenance and repair workers were identified.
- In Design, various types of engineers, architects, and technicians were identified.

A number of respondents identified job shortages in their industries. About two-thirds of those respondents agreed that job shortages were due to workers leaving the workforce and the inability of their industries to keep pace with replacements. About 60 percent indicated that workers do not have the necessary skills to perform the jobs. Their comments suggest that in some industries, individual efforts are actively addressing the issues related to job shortages.

Of the respondents who disagreed or did not know about “fastest growing or largest occupations” in the industries they represented, the survey prompted them to specify jobs that they would omit or add to the list. Their comments suggest that lists of jobs did not pertain to their industries, were not considered to be areas of growth, or were “title-based” rather than skills-based.

Job Skills

When presented with the CRB’s analysis of the top third most commonly identified job skills that corresponded to the fastest growing and largest occupations in their industries, the majority of respondents agreed with the analysis. In addition, they suggested other important job skills including basic reading, writing, math, and science as well as critical reasoning, computer skills, and interpersonal and team work skills. When asked whether entry-level workers possess the necessary skills to perform their jobs, about two-thirds of the respondents agreed that they do “sometimes” or “most of the time.” About 40 percent of employers agreed that there was one or more occupations in their firm or the firms they represented that would be suitable to hire or at least provide an internship opportunity for high school students.

More than 60 percent of employers agreed there are one or more ways for high school students or entry-level workers to enter and advance in their industries. Some employers suggested that “entry-level” employment in their industries meant a postsecondary education, while others pointed to specific ways that recent high school graduates could begin working in their industries such as job shadowing, internships, summer or part-time employment, apprenticeship, and on-the-job training. Some other specific examples include:

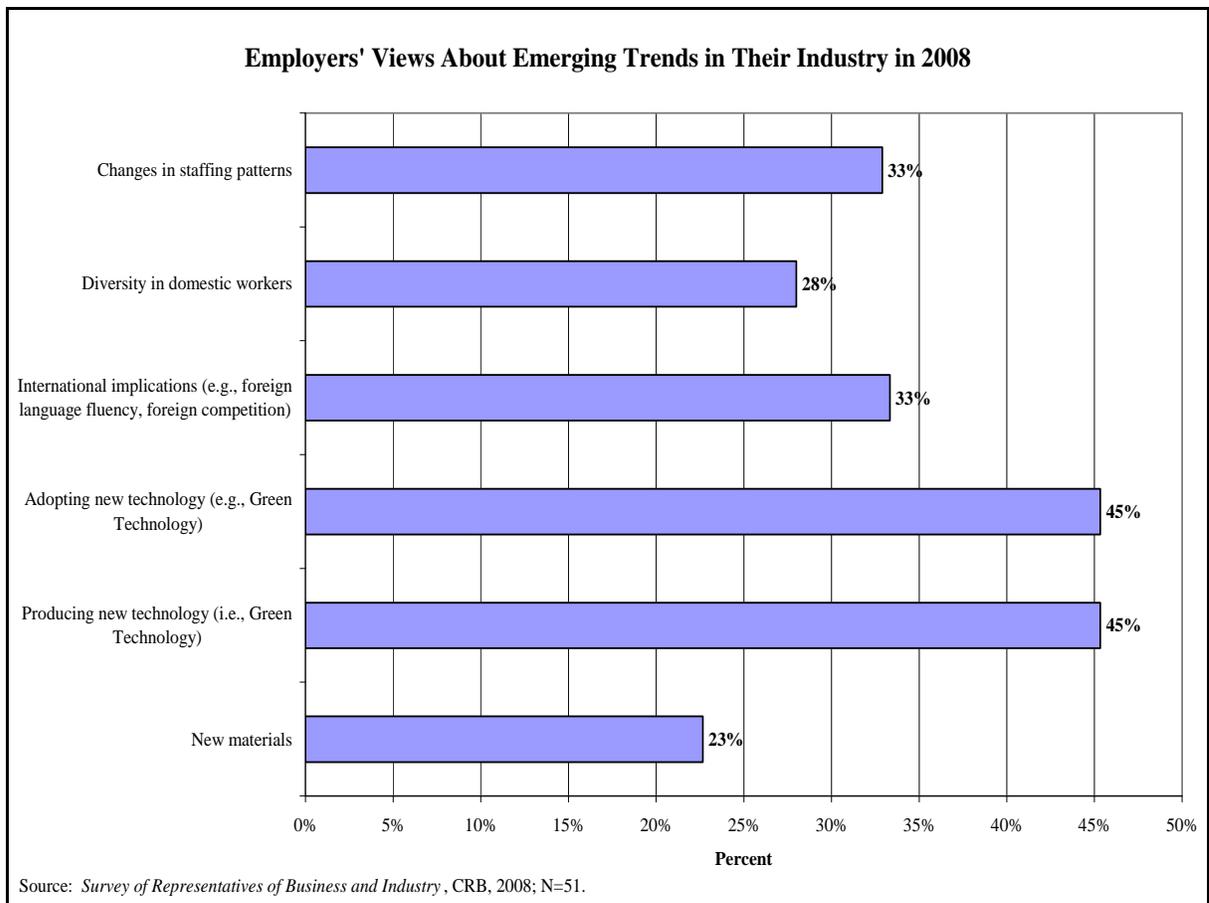
- “They can enter as clerks to the pharmacy. But anything further such as a technician or pharmacist, schooling is involved.” (Health Science and Services)
- “Students potentially could provide back office functions in physician offices; some do part-time medical assisting.” (Health Science and Services)
- “As a helper/packer.” (Manufacturing Value Chain – *Logistics*)

- “There are always openings for entry-level workers in the meat packing and processing business. In fact, due to the difficulty of the work, turnover is quite high.” (Manufacturing Value Chain – *Production*)
- “Starting at the bottom and working their way up!” (Manufacturing Value Chain – *Production*)
- “Field operations, packing operations, sales assistance operations.” (Manufacturing Value Chain – *Production*)
- “On-site training, but then go to an accredited college to learn the necessary tools to advance within the profession.” (Manufacturing Value Chain – *Design*)
- “Intern in a firm, participate in a ‘Built Environmental Education Program’ (BEEP).” (Manufacturing Value Chain – *Design*)
- “School of Hard Knocks, sign up and start working in small firms.” (Manufacturing Value Chain – *Design*)
- “Entry-level workers may have opportunities in the insurance industry due to an initial lower salary and learning curve.” (Manufacturing Value Chain – *Design*)
- “Through volunteerism. Building skills in specific abilities like fundraising. Gaining a college degree. We are an industry where it is difficult to get very far up the ladder without a degree.” (Manufacturing Value Chain – *Design*)
- “Any student can start working at a dealership and advance either to a service position or sales. It is not uncommon for someone to stay in the industry to the point of ownership from an entry-level position.” (Retail Trade)
- “Several top-level executives in companies throughout the state began with their company as a box boy/bagger and worked their way through management.” (Retail Trade)

EMERGING TRENDS

The final section of the employer survey asked respondents about: 1) emerging trends that might affect the occupations or job skills in their industries; 2) how responsive CEOs in their industries were to these trends; and 3) what, if any, changes had been made as a result of identifying these emerging trends. Survey questions also inquired about the presence of any pressures to leave California, and the impacts the pressures might have on their ability to employ students leaving high school, given their current skill levels.

About 70 percent of the respondents recognized the existence of emerging trends facing their industries. Of those who agreed, almost half of the respondents reported that producing or adopting new technology were important trends; and a third each indicated that changes in staffing patterns and international implications were trends they foresaw as affecting jobs or necessary job skills in their industries.



Several additional written comments addressed other issues: an older workforce that will be retiring within the next 5-10 years, the need for infrastructure investments, and the existence of excessive regulations and fees. When asked to rate the extent to which industry CEOs were responsive to emerging trends, more than 70 percent of respondents indicated that CEOs were “responsive” or “very responsive.” They explained how CEOs were conducting business differently as a result of emerging trends by: keeping up with new technologies, providing education and training opportunities for employees, screening job applicants better, undertaking succession planning for retirees, restructuring operations to create efficiencies, providing a greater diversity of services to keep competitive, and offering telecommuting to workers.

When asked to rate whether their firm or the firms in their industry faced any pressures to leave California, about 40 percent of the responding employers indicated that they face no pressure. Approximately 30 percent reported facing “some pressures,” and 13 percent stated that their firm or the firms in their industries face “enormous pressures.”

Among those respondents whose firms face some or enormous pressures to leave the state, the majority asserted that the pressures resulted from higher taxes; about 30 percent reported that pressures were due to the unpreparedness of the labor force, and about 20 percent thought the pressures were due to a lack of infrastructure. Other themes that emerged include: the high cost of living in the state (i.e., housing and transportation),

unfriendly legislation, unreasonable regulations or fees, the lack of educated workers, the high cost of infrastructure building, the need for tax incentives (i.e., single sales factor), and outsourcing of workers.

The final set of questions in the employer survey asked whether “emerging trends” or the “pressures to change” affected their company’s ability or the ability of the companies in their industries to employ students leaving high school with their current level of skills. Responses were equally split between agreeing and disagreeing. When asked to elaborate on their responses, many respondents reiterated their opinions that a high school education was not sufficient for them to hire a graduate and that additional education and training were necessary.

Methodology and Procedures

This section describes the methodology and procedures used to develop and conduct a survey of representatives of business and industry in California. The goals were to:

- (1) Determine whether existing educational programs adequately prepare students for the world of careers.
- (2) Assess employers' current and future workforce needs.
- (3) Describe existing impediments to hiring employees with the necessary skills.

The methodology for developing the employer survey and selecting the representatives of business and industry is described below.

METHODOLOGY

The CRB research team used the economic analysis of California's regional industry clusters developed by the Economic Strategy Panel to select the following four industry clusters as representative of the diversity of the state's economy:^{*}

- Basic Information Services
- The Manufacturing Value Chain (including Logistics, Production, and Design)
- Health Science and Services
- Retail Trade

We first identified the two largest employing subsectors within each of those four industry clusters across the nine economic regions of the state, for a total of 25 industry sectors.[†] For a list of the industry sectors included in the employer survey, please refer to Appendix 2.

The CRB research team developed three objectives, whose corresponding questions were used to conduct the employer survey, with the input of the Legislative Advisory

^{*} The four industry clusters were identified with the input of Dr. Edward Kawahara, Principal Consultant of the Economic Strategy Panel, and Mr. Dean Misczynski, Retired Director of the California Research Bureau.

[†] The subsectors were identified from the California Labor and Workforce Development Agency, Economic Strategy Panel, *2006 Regional Base Reports*.

Committee and other interested stakeholders, in order to meet the goals of this study phase. The objectives included:

1. Determine what involvement businesses have with their local public K-12 schools.
2. Verify government-collected information regarding the fastest growing and largest occupations in California through 2014 and identify their corresponding job skills.
3. Identify any emerging trends that may not be captured by the economic data currently available.

The CRB research team designed the employer survey to gather specific information relative to occupations and job skills that are germane to their industries. Therefore, identical questions were posed to industry representatives, except for those questions that were industry specific, in meeting the second objective. There were some expected variations among the occupations and job skills identified by industry as well as some commonalities for industries with similar staffing patterns. For each selected occupation, the CRB research team identified the corresponding job skills, using information from O*Net of the U.S. Department of Labor's Bureau of Labor Statistics. The CRB research team aggregated the job skills and identified the top third most commonly identified job skills. These were then used in the employer survey. Please refer to Appendix 3 for a copy of the O*Net job skills.

Please refer to Appendix 4 for a copy of the employer surveys.

SELECTION OF REPRESENTATIVES OF BUSINESS AND INDUSTRY

The CRB research team initially selected representatives of business and industry by searching for California-based associations in the Encyclopedia of Associations by industry and region, by using *Lexus Nexus* software, identifying business associations registered through the California Secretary of State, and using a "Google" Internet search.

Simultaneous to the process of reviewing the draft objectives and employer survey, the CRB research team solicited broad input regarding the identified employer associations from members of the Legislative Advisory Committee, representatives of education, workforce preparation, economic development, business, and labor. For a list of the individuals who reviewed the draft employer survey and the list of associations to contact, please refer to Appendix 5.

SURVEY PROCEDURES

The CRB research team pilot tested the draft survey questions with the California Small Business Association, the Society for Human Resource Management, and several members of the Governor's Office of Small Business Advocate. The purpose of pilot testing the draft employer survey was to determine the clarity and appropriateness of the

questions and to ensure that the survey could be completed within a 30-minute period. Some of the questions were modified based on the input received during the pilot test phase.

The research team contacted each employer association to verify the name and e-mail address of the respondents for mailing the survey electronically, to determine the appropriateness of their business or association's participation, and to obtain suggestions about additional associations that were inadvertently omitted from the research team's initial online search methods. The research team launched the electronic survey of representatives of business and industry in mid-June and continued through August 7, 2008, using *SurveyMonkey*.^{*} The research team followed up with nonresponding employers multiple times.

There were 75 representatives of business and industry of a total of 111 "targeted" employer associations who responded. They represented all but three of the 25 selected industry sectors within the four industry clusters.[†] Their survey responses are considered descriptive, since the research team used a targeted approach rather than a random selection process for identifying employer associations. In some instances, one association in California represents firms in a particular industry, while in other cases, some associations or trade groups represent more than one industry. Therefore, the research team solicited a response from each industry they represented. Moreover, some associations requested that their members also participate, so the survey was made available for multiple responses, using an Internet link. These associations included the California Manufacturers and Technology Association, the California Small Business Association, the Institute of Electrical and Electronics Engineers, the American Society of Civil Engineers, Consulting Engineers & Land Surveyors of California, the Structural Engineers Association of California, and the American Institute of Architects/California Council.

^{*} *SurveyMonkey* is a software product used to conduct online surveys.

[†] The research team did not receive a response from the following three industry sectors: Computer & Peripheral Equipment Manufacturing (within Production of the Manufacturing Value Chain), Electronic Instrument Manufacturing (within Production of the Manufacturing Value Chain), and Motor Vehicle Manufacturing (within Production of the Manufacturing Value Chain).

Employer Survey Findings

DESCRIPTION OF RESPONDENTS

Respondents of the employer survey were either affiliated with an association, trade group, or they represented their own firm. For respondents from an association or trade group, a fifth represented more than 500 firms and approximately another fifth represented between 101 and 500 companies, as viewed in Table 1.*

Table 1

Respondents' Representation of Firms in Their Industry	
Number of Firms	Percent
0	3%
1-10	0%
11-25	8%
26-50	4%
51-100	5%
101-250	9%
251-500	12%
501+	20%
No Answer	39%
Total	100%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=75.

For those respondents representing their own company, about 20 percent indicated that they employed more than 500 employees, as seen in Table 2.†

* About 40 percent of the respondents provided no answer to this question, perhaps because they responded as a representative of their own firm, as depicted in Table 2.

† About two-thirds of the respondents did not answer this question; however, only four respondents did not respond to either question related to the number of firms or employees they represented.

Table 2

Respondents' Representation of Employees in Their Firm	
Number of Employees	Percent
0	1%
1-10	3%
11-25	3%
26-50	1%
51-100	5%
101-250	3%
251-500	0%
501+	17%
No Answer	67%
Total	100%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=75.

Nearly 70 percent of the respondents had more than ten years of experience working in the industries represented in the survey, as displayed in Table 3.

Table 3

Respondents' Years of Industry Experience	
Years	Percent
1-4 years	7%
5-10 years	17%
11+ years	68%
No Answer	8%
Total	100%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=75.

BUSINESS PARTNERSHIPS WITH SCHOOLS

The survey described a California law that requires local school districts to provide a course of study to middle and high school students to prepare them for entry-level employment after graduating from high school,^{*} and asked respondents whether they believed that the existing educational programs adequately prepare high school students for employment in their industry. Employers were then prompted to respond to a series of questions regarding either their firms' involvement with local public schools or firms they represented in their industry. If the respondents affirmed their involvement, then the

^{*} Education Code § 51228 (b) requires "local school boards maintaining any of grades 7 to 12, inclusive, to offer to all otherwise qualified pupils in those grades a course of study that provides an opportunity to attain entry-level employment skills in business or industry upon graduation from high school."

succeeding questions queried them about the type of involvement, how they or the firms they represented got involved with schools, and to describe their opinions about whether the partnerships were beneficial to either the businesses or students involved. Whether or not the respondents expressed some benefit, the survey probed the respondents to elaborate further on their answers.

If respondents denied having any partnership or relationship with public middle or high schools, the survey asked them to identify possible impediments by selecting from a lengthy list of reasons. The survey next requested respondents to provide an opinion about whether it would be useful to establish a partnership with middle or high schools. If they believed that such a partnership would be useful, the survey asked them to identify the factors that might be necessary to undertake such efforts. If respondents did not believe that a partnership would be useful to their business, the survey prompted them to explain their opinions in this regard.

Business Partnerships with Schools

To learn about employers’ perspectives on whether existing educational programs adequately prepare high school students for entry-level employment in their industry, the survey referred to a provision of the California education code and asked the respondents to share their opinions by rating school programs on a scale of one (not preparing students at all) to four (preparing students very well).^{*} Table 4 shows that approximately half of the respondents indicated that existing educational programs “inadequately prepare” or “do not prepare students at all” for employment in their industries. Forty percent of respondents reported that schools “somewhat prepare students” for employment in their industries, while only three percent stated that schools are preparing students “very well.”

Table 4

Business/Industry Views on How Well Educational Programs Prepare High School Students for Employment	
Response	Percent
Not preparing students at all	16%
Inadequately preparing students	31%
Somewhat preparing students	40%
Preparing students very well	3%
Don’t Know	3%
No Answer	8%
Total	100%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=75.

^{*} Education Code § 51228 (b) requires “local school boards maintaining any of grades 7 to 12, inclusive, to offer to all otherwise qualified pupils in those grades a course of study that provides an opportunity to attain entry-level employment skills in business or industry upon graduation from high school.”

The survey allowed respondents to elaborate on their opinions, and several common themes emerged across the different industries represented, including:

- Students do not have the necessary skills to perform the work.
- The quality of education varies considerably among schools.
- While the nature of jobs has changed, the educational system has not.
- Some industries do not expect high school students to be prepared for entry-level positions because critical jobs require post-secondary education; other industries offer extensive entry-level training.
- Experiential learning (i.e., career technical education) is lacking in public schools because of a focus on theory.
- Students are not taught “why” they need to have basic skills nor are they exposed to important industries existing in California (i.e., health, agriculture, engineering, and architecture).

A sampling of respondents’ comments, by industry cluster, is provided below.

Basic Information Services*

- “Employees at competitive telecom firms (resellers) are often expected to perform tasks and solve problems across a wide range of functional areas. Because competitive firms often cannot afford to invest in expensive training programs, they prefer to hire entry-level employees that have been trained by the incumbent providers.”
- “Our industry is very technical by nature and requires skills and knowledge that are beyond high school curricula.”
- “... no one just out of high school has any business self-publishing or independent publishing, not in any meaningful sense. Nor, actually, many who are recently out of college. This is an endeavor one comes to over many years.”
- “Very inconsistent curriculum, teaching, parental involvement, social pressure, and the difficulty and changing nature of publishing, all contribute.”

Health Science and Services

- “Too many students are not prepared for college-level courses. Their math, English, and science skills are below those required for health careers.”

* The two subsectors within Basic Information Services included Telecommunications and Publishing.

- “New employees in our industry need to perform at a basic level of competency to include reading comprehension, writing and math skills through algebra. In our business, employees must also possess excellent soft skills that include customer service, reliability, team work and commitment to task to name a few.”
- “In general, the majority of professional level positions require a college degree. There is a lack of ethnic minorities prepared for the rigors of a professional program such as nursing programs.”
- “Little effort is given in grades 7-12 to interest students in health professions careers, or to prepare them for such careers.”
- “Jobs have dramatically changed over the last 20 years; however, the education system has not evolved as quickly.”
- “Careers in science fields require that students have both a solid foundation in math and critical thinking skills. Too many students graduate without adequate reasoning skills and ability to solve problems. Moreover, they are not even made aware of the career opportunities across the sciences beyond graduate level training. Students are typically not informed of career paths at the +2 year, +4 year training.”
- “One in four students is dropping out of school because traditional book learning is not capturing student's attention. Experiential learning opportunities are needed.”
- “Science and Math opportunities vary considerably between high schools; however, even the best high schools could not provide entry-level employment skills for anything but the lowest paid positions in a biotech or other scientific fields, with little room for career advancement.”

Manufacturing Value Chain – Logistics

- “I think schools could benefit from partnering with businesses and industries to provide more opportunities.”
- “Students are taught theory and not practical factors.”
- “Many of the people applying in our industry have poor reading, spelling, math and communication skills.”

Manufacturing Value Chain – Production

- “Career technical education (formerly known as vocational classes) are severely lacking in California. Of those students that graduate from high school and are able to go on to college, some are prepared for engineering disciplines, which are useful in our industry. However, very few that graduate and do not go to college are prepared to work in shipyards without significant additional training.”
- “We do not have the expectation that high school should prepare students for entry-level positions in any industry. High school should prepare students to be informed, thoughtful citizens and prepare them for additional, technical and specific education after high

school. High school should demonstrate to students the relevancy of basic, foundational education in many subject areas to adult life and work.”

- “Need more trained teachers in math and science.”
- “There are some programs that teach students about livestock and agriculture, but they are not comprehensive. Frankly, they could be a lot better. Agriculture is an incredibly important industry to California, incredibly complex as well, and it’s very underrepresented in the curriculum. When it comes to meat production, the level of ignorance is frightening. Unfortunately, this difficult, dangerous and often unpleasant work does not lend itself to tours, videos and the like. Also it is surrounded by controversy, making it very difficult to education students about anything more than nutrition.”
- “Depends on the school students attend. Some are prepared adequately and others are not.”
- “If a student is involved with agricultural classes, they are somewhat prepared. However, students that don’t take agricultural classes are not prepared at all.”
- “Basic math, reading, oral, and computer skills are a fundamental requirement. Students are not taught ‘why’ they need to have these skills.”
- “Workers must be over 18 years old to work in factories.”
- “We provide extensive training for entry-level positions.”

Manufacturing Value Chain – Design

- “You need advanced skills to perform our services which can only be acquired through special training.”
- “I am unaware of any programs in the high schools that lead students toward architecture-related fields.”
- “Some schools do well in providing drafting classes, but little in design and/or related public policy issues.”
- “Engineering requires strong math and science and critical thinking which I don’t see much of in schools.”
- “A bachelor’s degree and preferably a master's degree in an [Accreditation Board for Engineering and Technology] ABET-accredited college or university program are necessary to enter the practice of ... engineering. Current educational programs for grades 7-12 are not adequately preparing or attracting students to the engineering profession.”
- “Our engineers have graduated from college. To assess how well prepared their grade school was does not make much sense since all engineers graduate from college and do not come directly from high school. Although, as a consultant, I taught high school graduates, in a 5.5 month VERY INTENSIVE program, the practical portions of

chemical engineering to allow high school students to become chemical and petroleum refinery plant operators and make salaries of more than \$100,000 a year. We found it difficult to find candidates to interview for this training. As their instructor, I found they were woefully unprepared. I had to increase my Industrial Math module from 40 hours of instruction to 120 hours.”

- “Basic math and science is covered but exposure to the options for careers is limited due to state testing focus.”
- “Students do not need advanced math so much as is the trend being emphasized these days, but rather critical thinking skills, more physical science, and more U.S. history and government courses.”
- “It depends on the industry, but for the safety and health profession even college grads are not prepared. Analytical and writing skills are the main issues.”
- “Not enough companies and organizations outreaching to high schools.”
- “Students are not exposed to any or current manufacturing.”
- “Schools do offer community service opportunities but do not believe there are any programs or services to prepare students to work in the nonprofit community.”
- “General math and science performance seems to be slipping. Some schools locally have done a good job actively encouraging participation in grass-roots community programs (such as the Engineers Alliance for the Arts and their Student Impact Project as well as the ACE Mentor Program) that expose students to the engineering profession. SEAONC also attempts to expose students to the field of Structural Engineering. See: <http://www.reuters.com/article/pressRelease/idUS202078+06-May-2008+BW20080506>.”

Retail Trade

- “More emphasis should be placed on the large percentage of students who don’t pursue 4-year college degrees. Career technical education-including automotive technology-needs to be emphasized.”
- “This industry has many aspects to it, sales, service, technical skills, and computer knowledge. Most young people I have encountered only have some computer skills and lack other areas needed in this industry. In order for them to be successful, in-house training or specialized training is required for basic operations in this field.”

Employers with Partnerships

The survey defined a set of activities or programs which could constitute a business partnership with schools, and asked respondents whether their business or businesses they

represented had established any such partnerships.* About three in four respondents acknowledged some type of involvement with middle and high schools (76 percent).

The survey asked respondents whether their firm or the firms they represented had worked with an intermediary organization to facilitate the types of partnerships previously defined.† Only three percent had worked with an intermediary organization.‡

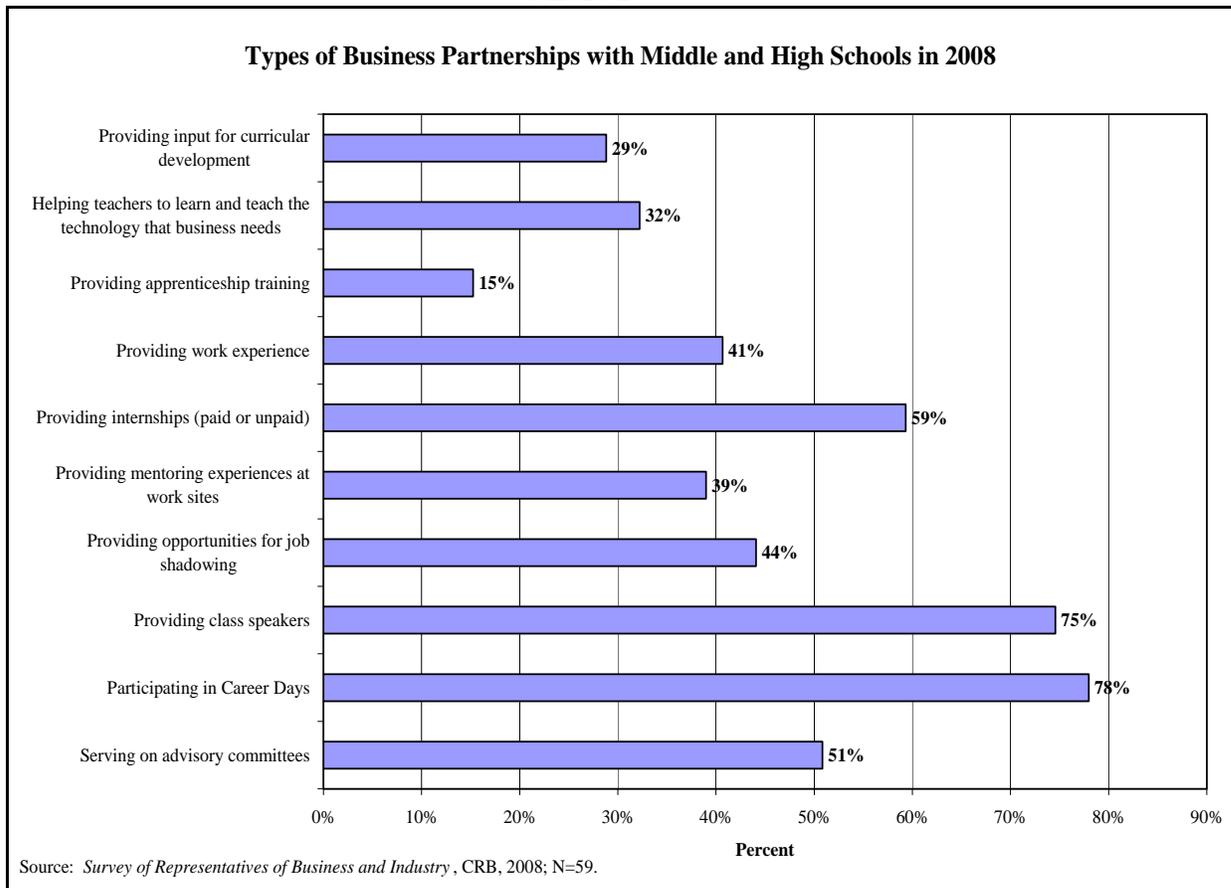
When asked to identify the types of partnerships their firms or the firms they represented had established, the majority of these respondents cited their role as participating in a “Career Day” or as a class speaker, followed by providing paid or unpaid internships and serving on an advisory committee, as displayed in Chart 1. The least cited type of partnership included apprenticeship training.

* The survey defined partnerships to include: serving as representatives on advisory committees, participating in career days, providing class speakers, providing opportunities for job shadowing, providing mentoring experiences at work sites, internships (paid or unpaid), work experience, apprenticeship training, helping teachers to learn and teach the technology that business needs, or providing input for curricular development.

† The survey defined an intermediary organization as one-stop career center, local workforce investment board, chamber of commerce, local economic development agency, trade association, county office of education, etc.

‡ Nearly all of the respondents did not answer the question (93 percent), did not know (three percent), or did not (one percent).

Chart 1



Many respondents specified other ways to partner with schools, as suggested in the following comments:

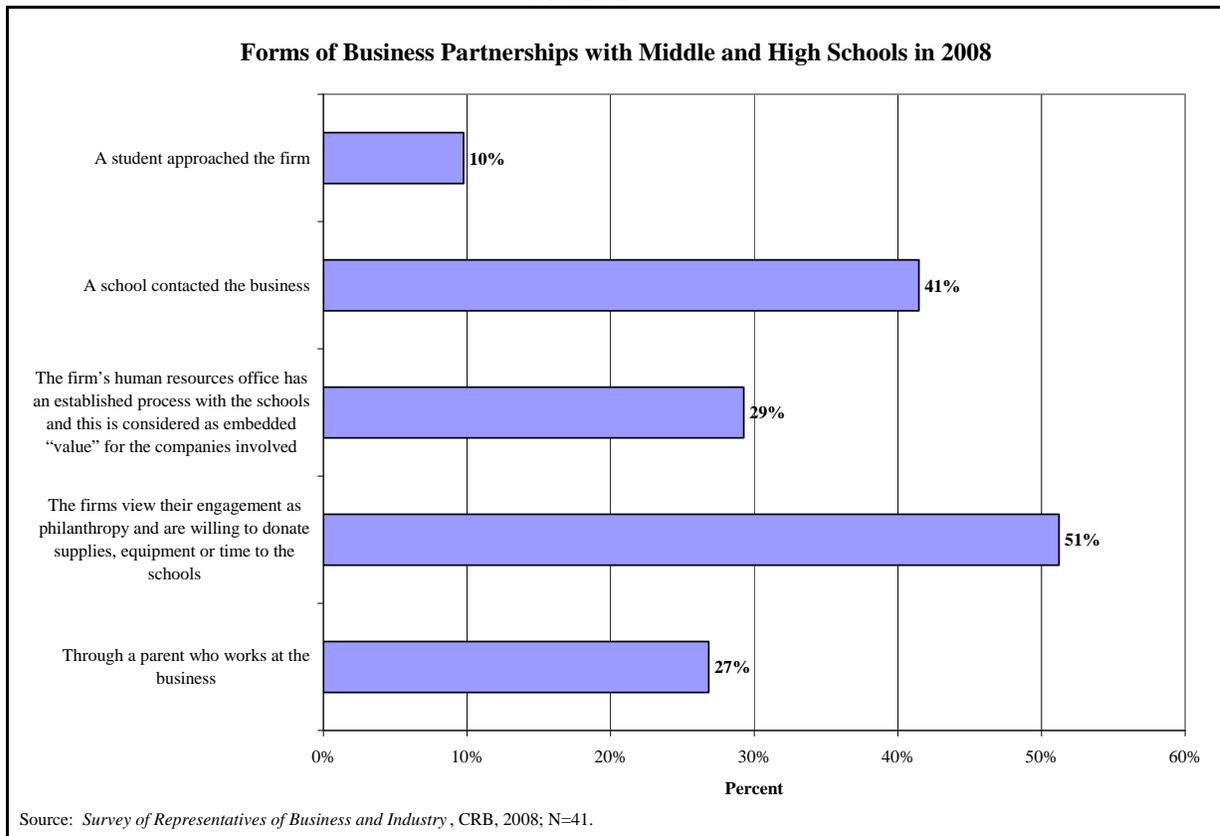
- “Adopt a school (elementary).”
- “Developing pre-college teacher trainings. Having university/college chapters reach out to pre-college schools.”
- “[Our organization] does not have specific partnerships with individual schools, but provides active participation in science fairs and other outreach events for 7-12 grade girls.”
- “Financial aid.”
- “Sponsor student engineering / design competitions.”
- “Many student civil engineering events such as popsicle bridge contests, West Point computer bridge simulations, Sim City urban planning are conducted to introduce students to the civil engineering profession. Videos and DVDs are also helpful.”

- “We also run an annual bridge design contest with \$2,500 in cash prizes to get middle and high school students interested in the [civil engineering] career field. Our businesses provide internships to university students only (not high school students).”
- “[My organization] provides scholarships to high school seniors that want to enter college studying chemical engineering. [My organization] also participates in science fairs, as judges. As a consultant, I conducted full-time training (40 hours per week for 5.5 months) to high school students who wanted to become chemical plant operators for an international chemical company.”
- “[My organization] has just prepared an ... educational promo DVD aimed at high school students. Some ... members have interest in presenting the video at nearby high schools, but I do not know that any presentations have taken place.”
- “[My organization] has had high school students taking technical classes at the yard, however the program has been small. Post-high school, we partner with the community colleges to provide technical education. We have discussed partnering with other high schools, but as of yet, have not found a good fit.”
- “We have helped develop and disperse curriculum to teachers throughout the state for elementary schools. We are beginning work on industry-sponsored curriculum for high schools. Many of our members visit school career days and speak in classes. Our members ... offer internships and work experience programs. [My organization] supports the FFA and 4-H programs and is an excellent resource for students with poultry projects.”

Nearly 70 percent of the respondents who had established a partnership with schools were aware of how their partnerships had commenced, and the survey followed up by asking them to specify from a list of possible means.* Chart 2 shows that the majority were philanthropic in nature.

* While 69 percent of respondents were aware of how their partnership began, 14 percent each stated that they did not or did not know, and three percent did not answer the question.

Chart 2



When given the opportunity to specify other means for how their business or the businesses they represented had formed a partnership with middle and high schools in California, a few respondents indicated that they have formal outreach programs with the schools. Others provided the following comments:

- “1) Formal Hospital/Association support for education and training of hard-to-recruit positions; 2) Basic mission of hospital to educate nurses, physicians, etc. and provide intern and residency experiences; 3) Need for career ladder opportunities for current employees needing high school, junior college, college and advanced degree learning; 4) Work with coalitions and community organizations interested in improving literacy, reducing dropout rates, encouraging students to pursue health education/career; 5) Education is an important variable/predictor of good citizenship and economic independence, self sufficiency.”
- “We work with San Diego County Office of Education and other key organizations such as the San Diego Science Alliance and the San Diego Workforce Partnership.”
- “As a Board Member in International Trade Education Program (ITEP).”
- “ACE Mentor Program contacted us.”
- “It wasn’t a specific school, but rather the Academies of Engineering program through the local school district.”

- “As [an organization], we find it difficult to GIVE AWAY scholarships. We contact schools but do not get a response from our offer to provide scholarships to high school graduates who are going to a college to study chemical engineering. As a consultant, we found it difficult finding high school graduates to interview for jobs as a chemical plant operator and earn six figures a year. I guess there is more appeal in flipping burgers.”
- “Our association promotes outreach and provides career materials to schools.”
- “[My organization] now headquartered in Maryland, has a link describing educational involvement. <http://www.sfpe.org/About/Foundation.aspx>”
- “There is a need for qualified technical workers at the yard and in the ship-building industry in general. We see these kinds of programs as part of our efforts to fill the pipeline of qualified candidates.”
- “Principal for a day program.”
- “We support the Automotive Youth Education Systems program and provide scholarships to qualified students seeking to pursue automotive technical careers.”

Table 5*

Business/Industry Views of Benefits of Their School-Business Partnerships/Relationships			
Business Partnerships/Relationships	Beneficial and Very beneficial	Not beneficial at all and Somewhat beneficial	Don't Know / Not Applicable
Serving on advisory committees	46%	14%	22%
Participating in career days	61%	14%	14%
Providing class speakers	47%	25%	12%
Providing opportunities for job shadowing	41%	10%	25%
Providing mentoring experiences at work sites	51%	5%	24%
Providing internships (paid or unpaid)	54%	8%	17%
Providing work experience	49%	7%	22%
Providing apprenticeship training	32%	5%	31%
Helping teachers to learn and teach the technology that business needs	32%	7%	29%
Providing input for curricular development	34%	10%	24%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=59.

Of the respondents who had experience with a school partnership, the survey prompted them to offer their opinions about whether their partnership was beneficial to their firm or the firms they represented in their industries. Table 5 includes their responses. In

* Respondents who did not answer this question are not included in Table 5, which accounts for the sum of the three columns not equaling to 100 percent.

general, respondents tended to be of the opinion that the partnerships were beneficial or very beneficial, more so than not beneficial at all or only somewhat beneficial.

The survey explored the possible reasons that respondents who stated that partnerships with schools were beneficial or very beneficial and found:

- 80 percent reported that they provided an opportunity to build good will and visibility in the community.
- 64 percent stated that they provided an opportunity to train potential future employees in the skills needed.
- 44 percent indicated that they provided an opportunity to observe future employees.

Respondents provided additional comments regarding the benefits of their partnerships with schools, which included:

- “Opportunity to introduce health care careers to students before they make career choices.”
- “The advisory committee, training teachers and supporting relevant curriculum are all integral to keeping the K-12 education system current with the workforce in the surrounding communities. The public-private partnerships between the school and the business all help to create classroom learning environments and curricula that are rich in content, and able to demonstrate relevance through real-world applications. Furthermore, these relationships provide the opportunities to communicate to students, through the school teachers, where emerging technologies are creating the jobs of the future.”
- “The positive responses were based on my developing and delivering an intense training session (40 hours per week for 5.5 months) to students that wanted to become chemical plant operators. All students who stayed in my ‘Future Tech’ class passed the training.”
- “[It is] most helpful when a company has a dedicated professional staff person interested in encouraging these types of partnerships.”

The survey probed the respondents to explain the reasons why they believed that their partnerships with schools were not beneficial at all or somewhat beneficial.

Approximately the same proportions of respondents (about 20 percent) agreed that there was a lack of time for staff to work with students, students did not have the skills needed to perform the work, and there was difficulty in communicating with the schools. Some respondents elaborated with the following comments:

- “Lack of data to assess benefits.”
- “The students from the middle and high schools we work with have been terrific. Our largest challenge has been an inability to influence curriculum changes and design to meet the rapid changes of our industry.”

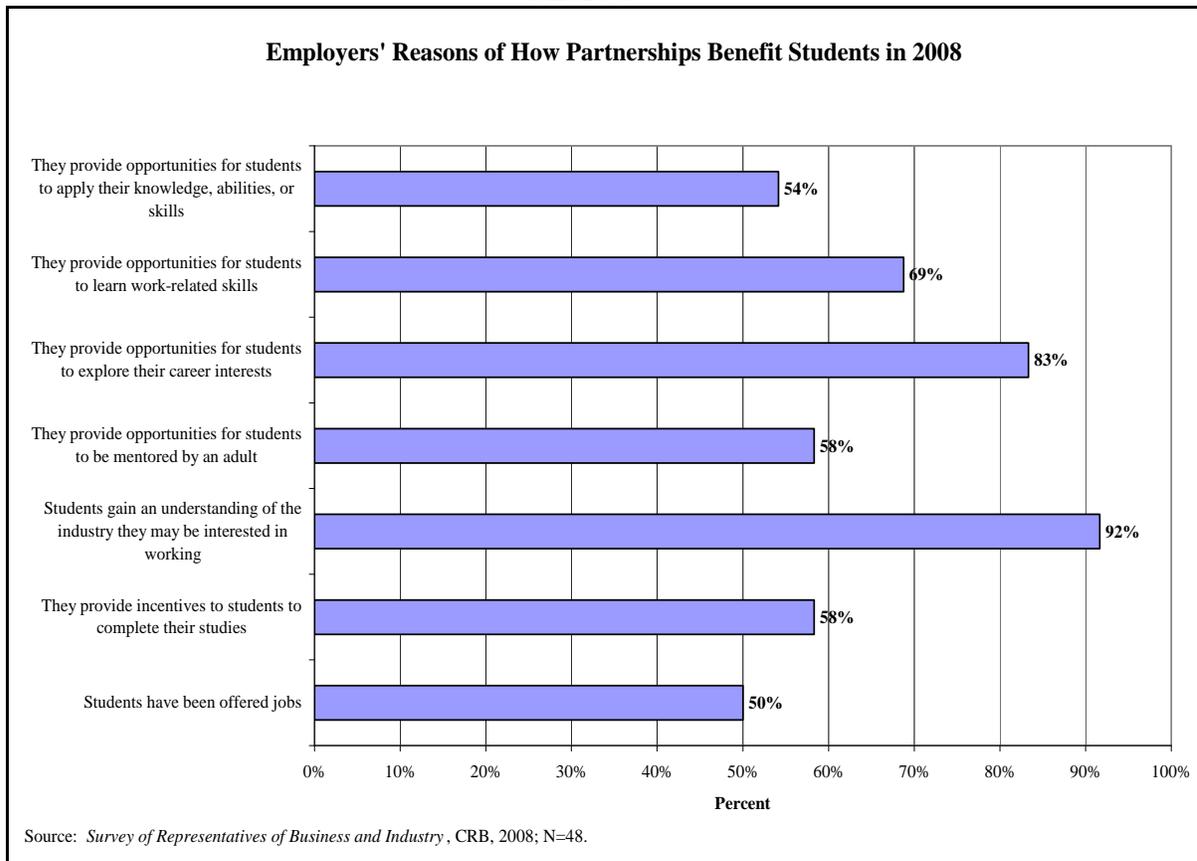
- “It can be a challenge to find work that is interesting to students that they can perform legally and with supervision.”
- “Insufficient support from school staff; inadequate outreach to parents; failure to target ‘at-risk’ youth.”
- “Difficult to know the impact of physicians speaking in schools has on student professional choices.”
- “Investments in the teacher are our highest priorities. The notion that a single teacher can reach over a thousand students during their career, we must be able to provide them the training and resources needed to inspire students and bring in technology to the classroom as our priority.”
- “[Our association’s] objective is not to obtain benefit from outreach activities, but to provide benefits to girls in grades 7-12 and encourage them to go into science.”
- “[It] takes a dedicated staff person to keep these kinds of programs going and usually industry staff is so busy with work this ‘extra’ function becomes a low priority.”

Next, the survey queried respondents who had affirmed being involved in a partnership with middle and high schools about their opinions whether these partnership activities or programs were beneficial to the students involved. Three-quarters responded that these partnership activities or programs were beneficial or very beneficial to students, while ten percent believed they were not beneficial at all or somewhat beneficial to students, and five percent did not know.

Of those respondents who indicated that these partnerships were beneficial or very beneficial to students, the survey asked them to specify how partnerships benefitted students. Chart 3 shows the two most prevalent benefits that they cited:

- 1) Students gain an understanding of the industry they may be interested in working (92 percent).
- 2) They provide opportunities for students to explore their career interests (83 percent).

Chart 3



A couple of respondents provided additional written comments of how partnerships benefitted students, including:

- “Give students a sense of responsibility; complete community services work with disadvantaged.”
- “Aimed at giving students and teachers hands-on experiences with science, the BIOCUM Institute is designed to increase interest in the life-science community. One encounter with an industry professional could be the tipping point in convincing a student to pursue a career in the biotech and medical device industry.”

The survey followed up with respondents requesting them to explain why they believed that partnerships were not beneficial at all or somewhat beneficial to students. The most cited reason was that schools do not provide sufficient assistance to support the program. A few respondents offered additional explanations such as:

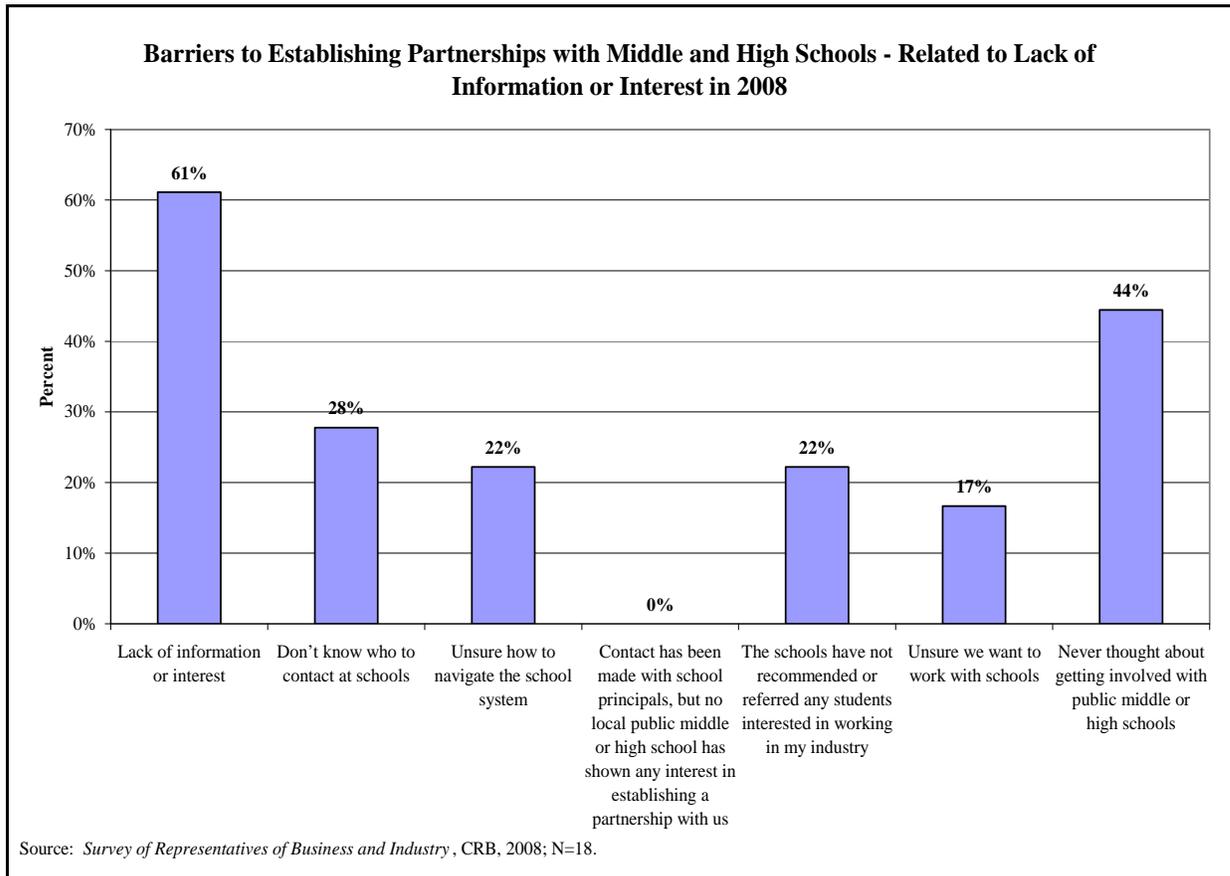
- “[It’s] hard for companies to provide consistent long-term support for high school training programs, and it usually becomes an infrequent effort.”
- “One of many priorities in the school curriculum.”
- “As this is not a highly organized program, none of the above applies. We don’t track these programs’ impact.”

Businesses without Partnerships/Relationships with Schools

For respondents who had not established a partnership with public middle or high schools, the survey prompted them to select from a list of possible barriers, grouped in five categories, which would most accurately represent their views. The categories included:

- Lack of Information or Interest
- Resource Issues
- Transportation Issues
- Other Impediments
- No Suitable Work for Middle or High School Students

Chart 4



Among the reasons in the first category, respondents most noted a lack of information or interest, followed by “never thought about getting involved with middle or high schools,” as seen in Chart 4. None of the respondents indicated that employers had attempted to

contact school principals, but middle or high schools did not show any interest in establishing a partnership.

Chart 5

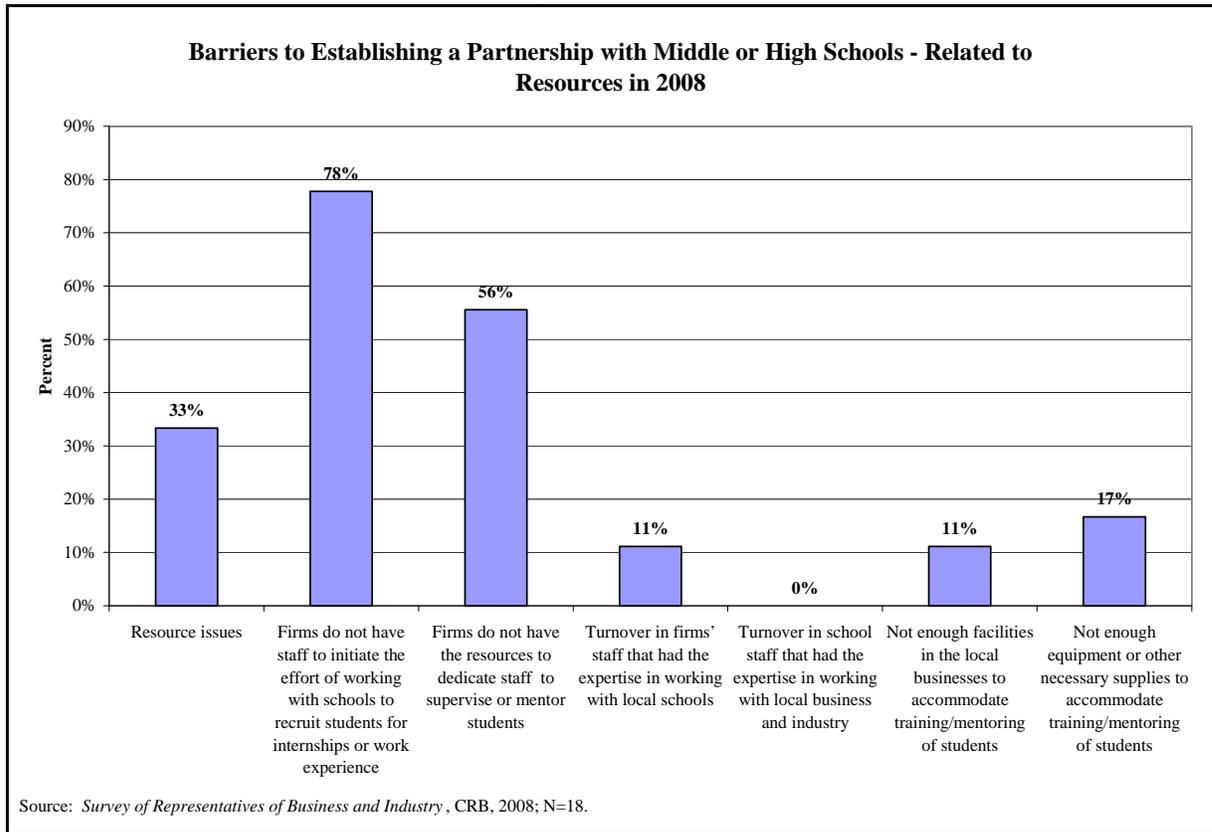


Chart 5 presents several issues related to resources that might explain why employers had not established a partnership with public schools. The majority of these respondents indicated that “firms do not have staff to initiate the effort of working with schools to recruit students for internships or work experience” or “firms do not have the resources to dedicate staff to supervise or mentor students.” “Turnover in school staff that had the expertise in working with local business and industry” was not considered a barrier according to these respondents.

Chart 6

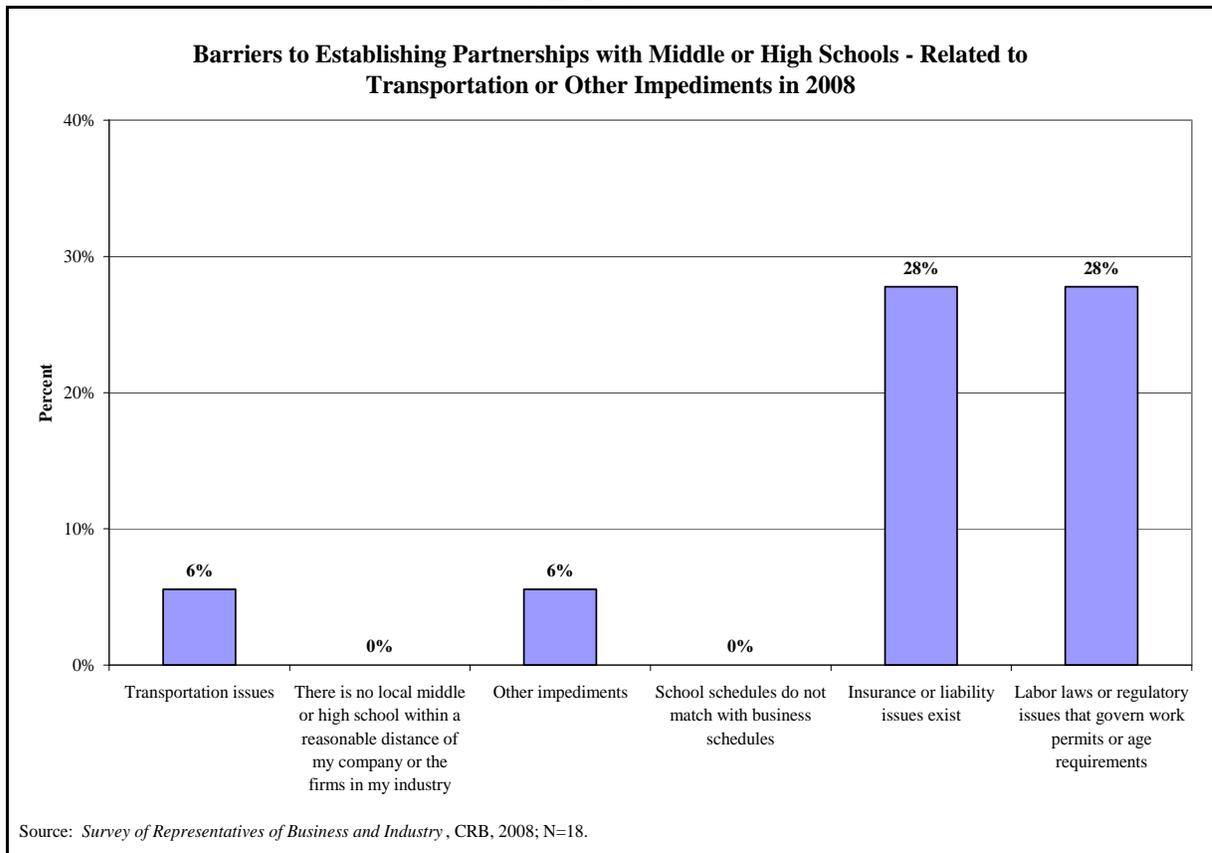
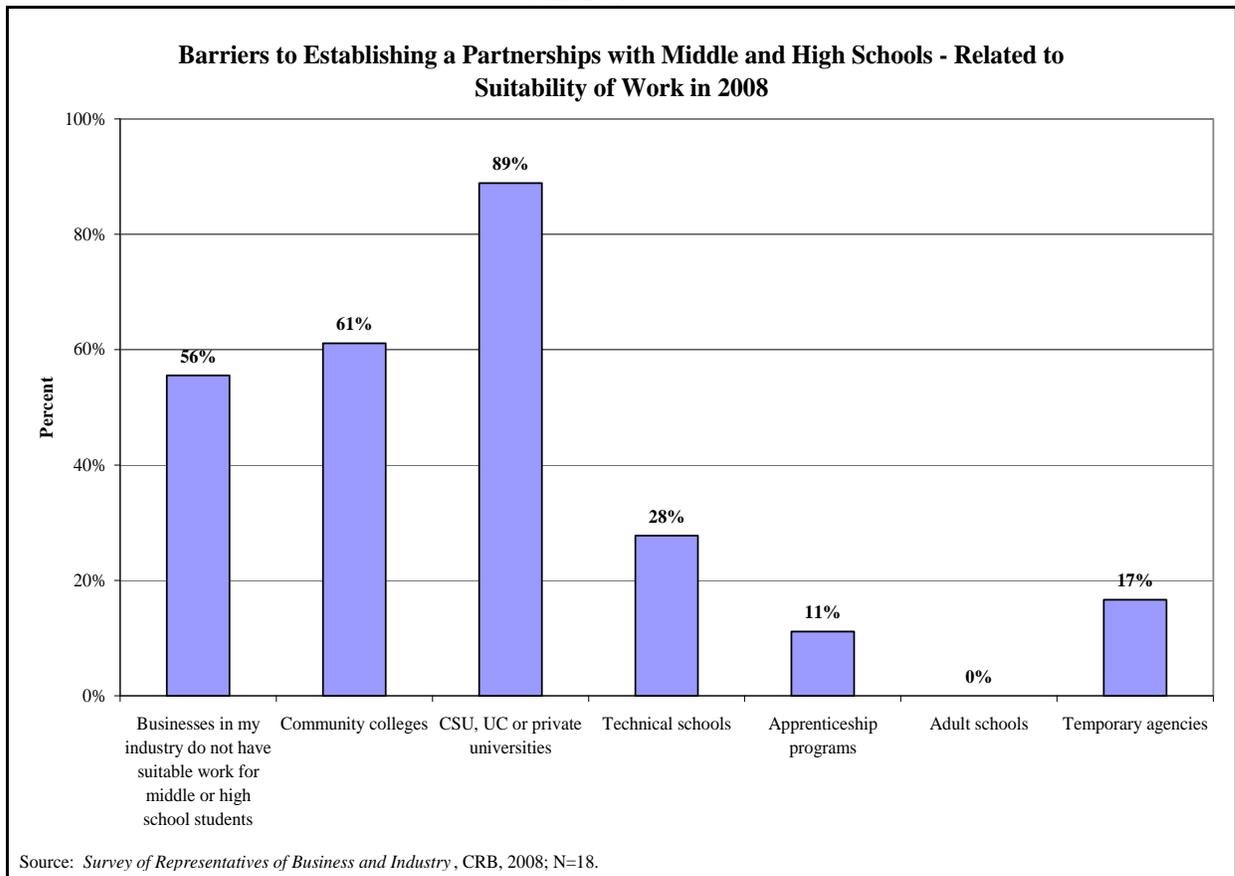


Chart 6 shows that employers did not consider transportation or other issues as significant barriers that would prevent them from establishing a partnership with middle or high schools in California. In particular, none of the respondents thought that distance between schools and business locations or the matching of business-school schedules were barriers for establishing a partnership. However, “labor laws or regulatory issues that govern work permits or age requirements” and “insurance or liability issues exist” were each cited among nearly 30 percent of these respondents.

The last category of possible barriers included the suitability of work for middle and high school students. Chart 7 shows that most of these respondents indicated that they hire students from four year universities or community colleges, and, to a lesser extent technical schools, temporary agencies, or apprenticeship programs. None of the respondents reported recruiting students from adult schools.

Chart 7



Some employers elaborated on their responses with the following comments:

- “I mention again the controversy that surrounds the meat industry. Animal rights activists raise tension levels and make schools fearful.”
- “Work is complicated, often requires licensing with special educational background. Mostly we just don’t think about reaching out to this age group.”
- “Asking members ... to volunteer more time to outside interests does not bring many volunteers. Some employers of individual member employers have their own outreach to high schools.”
- “Frequently, the businesses associated with [our association] are one-person operations, perhaps contracting out specialties such as typesetting or graphics or editing. Those roles require professionals.”

Usefulness of Partnerships with Schools

Of the respondents who had not established a partnership with public schools, the survey asked them whether they would consider it useful to do so, and four respondents agreed. When presented with a set of options they might use to establish a partnership, there were two respondents that agreed with each option (i.e., establish a “1-800” number to gather

information, get more assistance from schools, use information provided from an intermediary organization) and one agreed that using his/her own association to provide information to member firms about how to get involved might serve as a catalyst for getting them involved with schools.*

A couple of respondents suggested other avenues for initiating involvement with schools including:

- “It would be handy to have a website where volunteer speakers could go and see what schools/grades/classes are requesting presentations. Likewise, it would be handy for schools to go to a website that would list available speakers/a summary of their presentation/target audience/etc. so they could contact presenters.”
- “I think informing teachers of our profession via available curriculum and access to professionals would be most helpful.”

Respondents who did not believe that it would be useful to establish a partnership were asked to elaborate on their answers. Some of their comments included:

- “Resources (available staff and support).”
- “[Our organization] prefers to provide benefits to as many girls as possible and does not have the resources to focus on individual schools.”
- “Entry-level into the profession is more than high school.”
- “The average size of a business in this organization is 1 or 2 people. They have no time for this.” (Management and Consulting)
- “[We] cannot employ people under the age of 18 in an environment where there ‘might’ be machinery.” (Cut and Sew Apparel)

* An intermediary organization is defined as one-stop career center, local workforce investment board, chamber of commerce, local economic development agency, trade association, county office of education, etc.

Summary of Business Partnerships with Schools

Employers were first asked to provide their opinions regarding a state law requiring local school boards to offer a course of study to prepare middle and high school students for the opportunity to attain entry-level employment (Education Code § 51228 (b)). About half of the responding employers reported that existing educational programs are either inadequate or do not prepare students at all for employment in their industries. About one in four respondents thought that existing programs somewhat prepare, while only three percent thought that students were well prepared to work in their industries. Several themes emerged from the comments that respondents offered to explain their opinions. These included:

- Students do not have the necessary skills to perform the work.
- The quality of education varies considerably among schools.
- While the nature of jobs has changed, the educational system has not.
- Some industries do not expect high school students to be prepared for entry-level positions because critical jobs require post-secondary education; other industries offer extensive entry-level training.
- Experiential learning (i.e., career and technical education) is lacking in public schools because of a focus on theory.
- Students are not taught “why” they need to have basic skills nor are they exposed to important industries existing in California (i.e., health, agriculture, engineering, and architecture).

About three-fourths of the responding employers have some form of partnership with middle or high schools. Only three percent had worked with an intermediary organization to assist in partnering with public schools (such as a one-stop career center, local workforce investment board, chamber of commerce, local economic development agency, trade association, or county office of education). The most frequently cited type of school partnership involved participation in “career days” or as “class speakers.” Of the respondents who could recall how their business-school partnerships had initially formed, the majority evolved from philanthropic gestures.

The majority of respondents who had experience with a school partnership viewed their partnership as beneficial or very beneficial to their firms or the firms they represented. The two most cited benefits were:

- The opportunity to build good will and visibility in the community (80 percent).
- The opportunity to train potential future employees in the skills needed (64 percent).

The majority of respondents also believed that their partnerships with public schools were beneficial or very beneficial to students primarily because “students gain an understanding of the industry they may be interested in working in” and “they provide opportunities for students to explore their career interests.”

Respondents who felt that school partnerships were not beneficial at all or somewhat beneficial to their firms or to students stated the main reason was a lack of staff resources that restricts their ability “to work with students” and a lack of school staff to “provide sufficient assistance to support the program.”

For respondents who had not established a partnership with public middle or high schools, the three most prevailing barriers were:

- 1) The work is not suitable for middle and high school students, so employers must recruit from four-year universities (89 percent).
- 2) A lack of staff at firms to initiate the effort of working with schools to recruit students (78 percent).
- 3) A lack of information or interest (61 percent).

Some employers elaborated in more detail about existing barriers for partnering with schools:

- “I mention again the controversy that surrounds the meat industry. Animal rights activists raise tension levels and make schools fearful.”
- “Work is complicated [and] often requires licensing with special educational background. Mostly we just don’t think about reaching out to this age group.”
- “Asking members ... to volunteer more time to outside interests does not bring many volunteers. Some ... individual member employers have their own outreach to high schools.”
- “Frequently, the businesses associated with [our association] are one-person operations, perhaps contracting out specialties such as typesetting or graphics or editing. Those roles require professionals.”

CALIFORNIA GOVERNMENT DATA ON FASTEST GROWING AND LARGEST OCCUPATIONS AND JOB SKILLS

The second section of the employer survey posed a series of questions related to information gathered from the economic analysis of the fastest growing and largest occupations through 2014 and their related skills for each industry represented. Since there were variations among the jobs and skills of each industry cluster, the *content* of the questions (relating to the fastest growing and largest jobs and skills) differed by respondents' industry affiliation although the wording of the questions was identical for each respondent.

Fastest Growing and Largest Occupations in California

Respondents were presented with a list of fastest growing and largest occupations in the industries they represented, and Table 6 shows that slightly over half of the respondents agreed with the list, while the balance of respondents disagreed, did not know, or did not answer the question.

Table 6

Business/Industry Views of CRB's Analysis of Fastest Growing and Largest Occupations in California	
Response	Percent
Yes	53%
No	15%
Don't Know	23%
No Answer	9%
Total	100%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=75.

Respondents Agreeing with List of Occupations in their Industry

For those respondents who concurred with the specified list of jobs, the survey asked them to describe the occupations that they believed would:

1. Provide the most jobs

Table 7 displays the responses by industry cluster; however, the order that they appear in the table does not represent a ranking.

Table 7

Business/Industry Views of Occupations Providing the Most Employment					
Basic Information Services	Health Science and Services	Manufacturing Value Chain - Logistics	Manufacturing Value Chain - Production	Manufacturing Value Chain - Design	Retail Trade
Maintenance / Support	Nurses, both LVN & RN	Truck drivers - local and long distance	Maintenance and Repair Workers	Various Engineers: Civil; Chemical; Computer; Software; Electrical	Salespersons
Desktop Publishers	Physicians	Supply Chain Management / Logistics	Packaging operators	Mechanists	
Retail Salespersons	Pharmacy	Transportation / Freight		Lawyers, business, technical support for computer software, hardware maintenance, software training / support	
Analysts	Medical Assistants	Customer service representatives		Architects	
	Technician level workers			Civil Engineering (CE) Drafting technicians or CE technicians	
	Research			Construction	
	Lab workers			Process industry operators (for chemical plants, petroleum refineries, water treatment plant operators, wastewater treatment operators)	
	Radiology			Maintenance technicians	
				Instrument technicians	
				Landscaping	
				Biotechnology	
				Electricians	

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=39.

2. Be most critical for growth in the industry

Table 8 displays the responses by industry cluster; however, the order that they appear in the table does not represent a ranking.

Table 8

Business/Industry Views of Most Critical Occupations for Growth in Their Industries					
Basic Information Services	Health Science and Services	Manufacturing Value Chain - Logistics	Manufacturing Value Chain - Production	Manufacturing Value Chain - Design	Retail Trade
Engineering, Development	Registered Nurses	Skills in international trade and understanding of international commercial terms (INCOTERMS)	Engineering services	Engineers: Environmental; Civil; Structural; Agricultural; Technical	Automotive technicians
Desktop Publishers	Physicians and Surgeons	Cargo agents	Designer / Merchandisers	Architecture	
General and operations managers	Lab Scientists or workers	Truck drivers - local and long distance	Maintenance and repair workers	Engineering Managers	
Computer software engineers, applications	Pharmacy technicians	First-line supervisors/ managers of mechanics, installers, and repairers	Food safety positions	Civil Engineering (CE) Drafting technicians or CE technicians	
	Trained therapists, e.g., x-ray, respiratory, nuclear medicine, etc.		Skilled trades workers	Chemical, petroleum refinery, biopharm, water/ wastewater plants	
	Biomedical Engineers			Biotechnology	
	Product process development			Executive Director, fund development or fundraisers	
	Radiology technicians			Technical support for computer software, hardware maintenance, software training / support and business	

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=40.

3. Experience the greatest labor shortages

Table 9 displays the responses by industry cluster; however, the order that they appear in the table does not represent a ranking.

Table 9

Business/Industry Views of Occupations Experiencing the Greatest Labor Shortages					
Basic Information Services	Health Science and Services	Manufacturing Value Chain - Logistics	Manufacturing Value Chain - Production	Manufacturing Value Chain - Design	Retail Trade
Engineering, development	Registered Nurses	Truck drivers - local and long distance	Skilled trades workers	The specialty disciplines of Engineering: i.e., Civil; Mechanical; Environmental; Safety; Chemical Petroleum Refinery	Automotive technicians: mechanical, paint and body, and general repair
Reporters and Correspondents	Specialty physicians	Qualified Cargo Agents	Sewing machine operators	Mid-level Management in Construction Administration	
General and operations managers	Lab Scientists and lab workers	Marine Surveyors	Maintenance and Repair workers	Architects; Landscape Architects	
	Physical Therapist	Business operations specialists	Food safety positions	Civil Engineering (CE) Drafting technicians or CE technicians	
	Pharmacists and pharmacist technicians			Support Staff positions	
	Marketing / Sales				
	Radiology positions including imaging technicians				

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=37.

There are some common responses for occupations identified in Tables 7-9, for providing the most jobs, being the most critical for growth in the industry, and experiencing the greatest labor shortages in the industries they represented. For example, in the Health Science and Services, registered nurses, physicians, technical lab workers, pharmacy, and radiology jobs were identified for each group. In the area of logistics, truck drivers were identified in each category. In manufacturing production, maintenance and repair

workers were identified in each table. In design, various types of engineers, architects, and civil engineering drafting or technicians were identified.

Following up on respondents' disclosure of possible labor shortages, the survey further probed them about possible reasons for their anticipated shortages, as displayed in Table 10.*

- Sixty-eight percent of respondents believed that shortages would occur due to workers leaving the workforce and the inability of the industry to keep pace with replacements, whereas about a quarter of these respondents did not think this would be a factor.
- Thirty percent of respondents attributed the anticipated worker shortages to a lack of information for job seekers regarding their industry's needs, while 45 percent did not concur with this as a possible reason.
- Sixty-four percent of respondents indicated that workers do not have the necessary skills to perform the job, contrasted with about 30 percent who disagreed that this would be a contributing factor for possible labor shortages.

Table 10

Business/Industry Views of Reasons for Possible Labor Shortages			
Response	People are leaving the workforce and we cannot keep pace with the replacement needs.	There is no information for job seekers to find out about the need for workers in your industry.	Workers do not have the necessary skills to perform the job.
Yes	68%	30%	64%
No	26%	45%	32%
Don't Know	2%	13%	0%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=47.

Of the respondents who agreed with any of the questions posed in Table 10, the survey asked them whether anything was currently being done to respond to the potential labor shortages. Thirteen respondents responded affirmatively, while six answered negatively.† Comments of these respondents suggest that there are programs or partnerships currently addressing the issues related to job shortages as well concerns of a lack of response to job shortages. These are presented below by the industry cluster.

* The columns do not equal 100 percent because not all respondents answered the questions.

† Twenty-eight respondents did not know or did not answer the question.

Basic Information Services

- “California PUC initiative is the only program we are aware of.”

Health Science and Services

- “My association created a program to increase the number of pharmacists, laboratory scientist & medical laboratory technicians and the number of people in the imaging technology field.”
- “The BIOCOM Institute has created a website www.BiocomWorkforce.org that helps individuals understand career opportunities in the life science industry. This “one-stop-shop” for life science career resources educates regional talent pools about the skills necessary to fill life science positions. The website is organized into four sections; Life Science Careers, Education and Training, BIOCOM Initiatives, and Resources. Key features include a searchable database containing more than 700 life science career descriptions and 200 degree and professional development programs offered by educational institutions within Southern California. This clearinghouse of industry-specific career information reaches employers who want a link to potential workers, students making a career choice, job seekers looking for employment resources, and workers who are looking for a career change. We could use help publicizing this great resource to the community at large.

Currently, the U.S. is importing more than half of the graduate students and postdocs to train and perform the science in academia, government and industry. Many of these students and postdocs will return to their countries of origin. Over the next two decades more than half of the scientists in academia and federal labs are scheduled to retire. There will be a significant shortage of U.S. citizens to replace the growing need and it can result in major security issues for the U.S. Moreover, our public education systems from the youngest ages are ill equipped to train the growing need of a scientific workforce especially from underrepresented communities. Yet there is where the greatest potential exists in the near future. More than [50 percent] of the kindergarten students in California are currently Latino. This number is expected to grow in the coming years; however, the services and future training capacities for this population are severely under funded and unprepared.”

- “There are multiple private/public partnerships working to reduce the number of replacement positions.”
- “Promote awareness about careers and a early career path to support student success from high school through college. An example such as a massive incentive scholarship programs for science, tech and engineering degrees for students directly out of high school and through college for U.S. students. The lack of awareness about career opportunities coupled with the rigor of the education programs makes science and engineering degrees unattractive to students. As such they select social sciences and humanities over the high-tech paths. And for a many other students who do choose science and engineering paths they are simply underprepared to be successful at the college level of rigor.”
- “Many efforts in CA to increase number of nursing programs.”

Manufacturing Value Chain – Logistics

- “There are many programs set up to hire and promote the need for drivers.”
- “Some schools are starting to teach the practical factors, but the instructors lack understanding of the process.”
- “Eliminate the job-for-life teachers and install pay for performance.”

Manufacturing Value Chain – Production

- “The California legislature seems to have a number of bills for consideration that would re-institute career technical education in California schools, however with a budget deficit and fiscal pressure, it does not appear that any additional funds will be in place to support additional technical education.”
- “We provide extensive training to entry-level positions.”
- “Get consumers to pay more for domestic products so wages can be raised. Otherwise we will have to depend on a foreign source of labor to remain competitive.”

Manufacturing Value Chain – Design

- “Not enough seats in the architectural schools and the seats that are available are increasingly occupied by students not planning to go into architecture. No new schools are planned even though only 10-15% of the qualified applications are being accepted.”
- “There is an increasing amount of work related to the infrastructure and with this increase in work there will need to be a proportional increase in engineers educated.”
- “We are attempting to coordinate our efforts to educate schools through the regional [economic development corporation] and Junior Achievement.”
- “Get career counselors back on the staff and expose students to the various opportunities.”
- “Lots of training available, colleges offering more classes in nonprofit management.”
- “The local [junior college] provides training in the ‘Art of Process Industry’ but provides graduates with no practical knowledge.”
- “Provide more funding and outreach support to an [Accreditation Board for Engineering and Technology] ABET-accredited colleges as well as high schools and middle schools to attract more students to the civil engineering profession.”
- “Other than internships, not many projects are being explored for high schools.”

Retail Trade

- “More emphasis on [career technical education] CTE in high school and community colleges.”
- “There have been a variety of technical schools, but the high schools aren't encouraging students in this area.”

Respondents Not Agreeing with List of Occupations in Their Industries

The survey asked the nearly 40 percent of respondents who did not agree with or did not know about the list of fastest growing or largest occupations to specify jobs they would either add to or omit from that list. * Their comments suggest that the lists of jobs did not pertain to their industries, were not considered to be areas of growth, or were “title-based” rather than skills-based. Specific comments included:

- “There are jobs on the list that do not apply to hospitals or are not going to grow significantly.”
- “Skills in International Trade.”
- “The list misses the point. The list is ‘job title’ based, not skills based. High schools, community colleges and universities should focus on skills, not job titles. People do not do jobs based on job title. People bring skills and talent to an organization. Often people with the same ‘job title’ will provide significantly different tasks and value to an organization. The education should focus on skills, especially foundational skills which will prepare them for wherever the economy and technology needs them.”
- “I agree that those jobs will grow but Environmental Engineering may have a problem because it’s not currently a licensed discipline in California even though there is a demand for those services; we graduate students from Environmental Engineering college programs, and [National Council of Examiners in Engineering and Surveying] NCEES has an exam available for it.”
- “Some will grow but there will be an adequate supply of people. YES: Interviewers-with bilingual skills!; Licensed practical and licensed vocational nurses; radiologic technologists and technicians; respiratory therapists, registered nurses; medical and clinical laboratory technologists; medical and health services managers; pharmacists, pediatricians, healthcare support workers, business operations specialists, physicians and surgeons.”
- “These jobs are just a part of the entire process, not the ‘growth’ opportunities.”
- “Our industry is shrinking; factories are closing due to competition from overseas.” (Cut and Sew Apparel)

* Refer to Table 6.

- “For the chemical plants, petroleum refineries, biopharm, and environmental cleanup, the highest demand will be for chemical engineers.”
- “Many of the titles that apply to for-profit jobs do not exist in nonprofit community. Basic management positions are much the same but program areas would be very different.”

When asked which they might add or omit from the list of fastest growing or largest employing jobs, respondents provided several comments. For example, a few respondents representing the Health Science and Services cluster stated:

- “[Not include]: Maids and housekeeping cleaners; janitors and cleaners, except maids and housekeeping cleaners; nursing aids, orderlies, and attendants; office clerks, general; customer services representatives; First-line supervisors/managers of retail sales workers; medical assistants.”
- “Also add: (Short list supply): Physical therapist; public health nurse, child psychology, child psychiatry, ultrasound technician, pediatric dentist, orthopedic surgery, anesthesiologists, neurosurgeons, dermatologists, pulmonologists, family medicine, neurology, invasive cardiology.”
- “Change ranking: 1-Nurses, 2-, 3-, 4-, 5-, 6-, 7-Respiratory Therapists, 8-, 9-, 10-Everything else.”

One respondent representing the Manufacturing Value Chain *Logistics* suggested to:

- “Add: Finance & Accounting, Sales, Multi-lingual.”

Several respondents representing the Manufacturing Value Chain *Design* offered the follow comments:

- “I would add Agricultural Engineering - a niche that is currently often being filled by licensed Civil Engineers that may or may not be qualified to be doing that work.”
- “Add chemical engineers, process industry operators (for chemical plants, petroleum refineries, water treatment plant operators, wastewater treatment operators), maintenance technicians, instrument technicians, electricians. Omit most all the rest of the list.”
- “The ranking described ‘largest and grow the fastest.’ Fire Protection [Engineers (FPE)] may continue to be a significant part but not the largest tier of occupation classes. FPEs will grow and evolve and influence more public sector decisions and continue to expand membership in the international community with well paid and interesting projects and jobs. Some international sites are vying or are world class in research and testing and training for their spheres of influence.”
- “Fundraiser, grant writer, program manager, job training, executive director, membership development.”

Summary of California’s Fastest Growing and Largest Occupations

The survey posed a series of questions about the CRB’s economic analysis of the fastest growing and largest occupations in California through 2014, and their related job skills. While the questions were tailored depending on the jobs and skills required for each industry, the *content* of the questions was identical.

A majority of the respondents agreed with the CRB’s list of the fastest growing and largest occupations in their industries. The survey then asked these respondents to identify the job classifications that would provide the most jobs, were the most critical for growth in their industry, and would experience the greatest labor shortages. The CRB research team found some commonality in their responses. For example:

- Employers in the Health Science and Services industry identified registered nurses, physicians, technical lab workers, pharmacy, and radiology jobs.
- In the area of Logistics, freight and truck drivers were identified in each category.
- In Manufacturing Production, maintenance and repair workers were identified.
- In Design, various types of engineers, architects, and civil engineering drafting or civil engineering technicians were identified.

A number of respondents identified job shortages in their industries. About two-thirds of those respondents agreed that job shortages were due to workers leaving the workforce and the inability of their industries to keep pace with replacements. About 60 percent indicated that workers do not have the necessary skills to perform the jobs. Their comments suggest that in some industries, individual efforts are actively addressing the issues related to job shortages.

Of the respondents who disagreed or did not know about “fastest growing or largest occupations” in the industries they represented, the survey prompted them to specify jobs that they would omit or add to the list. Their comments suggest that lists of jobs did not pertain to their industries, were not considered to be areas of growth, or were “title-based” rather than skills-based.

Job Skills*

This section of the survey asked respondents about the top third most commonly identified job skills that corresponded to the list of fastest growing and largest occupations in their industries.[†] The survey specifically asked whether they agreed with

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor. Please refer to Appendix 3.

† The economic analysis of the fastest growing and largest occupations by industry cluster also included the corresponding skills for each occupation. The CRB research team aggregated the job skills for each industry sector and identified the top third most commonly identified job skills for each industry sector.

the CRB’s analysis of the most commonly identified job skills.* Table 11 indicates that more than half agreed while nearly a quarter of the respondents did not.

Table 11

Business/Industry Views of CRB’s Analysis of Top Third Most Commonly Identified Job Skills in Their Industries	
Response	Percent
Yes	56%
No	24%
Don’t Know	9%
No Answer	11%
Total	100%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=75.

Other important skills that the respondents offered included communications skills such as basic reading, writing, math, critical reasoning, computer skills, teamwork, and interpersonal skills. Respondents’ comments are listed by industry below.

Basic Information Services

- “Quantitative reasoning.”
- “Writing - drafting of clear, readable prose, suited to its purpose. Ability to research all manner of information, ranging from topics for nonfiction books or background for fiction to printers, typesetting, promotion, and so on.”
- “Ability to assimilate a lot of relevant and irrelevant data and ‘net things out.’ Planning and Execution Skills; Negotiation Skills.”
- “Ability to perform in a team working environment.”

Health Science and Services

- “Technical skills and knowledge for the industry.”
- “Basic science, mathematics, teamwork.”
- “Cultural awareness and cultural competency.”
- “Written communication skills.”

* Again, the *content* of the questions (relating to the fastest growing jobs and skills) differed by respondents’ industry affiliation although the wording of the questions was exactly the same.

- “Writing, presentation and oral communication skills are critically important in most careers. With the current focus of teens on texting, messaging and other electronic forms of communication, these skills are deteriorating fast.”

Manufacturing Value Chain – Logistics

- “Attitude!”
- “How about the basics? English, Math, Science, Health Science, Industrial Design, Basic Law, Speech & Communications, Personal Finance, Teamwork.”

Manufacturing Value Chain – Production

- “Problem solving; Attention to detail on paperwork, technical tools.”
- “Basic math skills; Computer skills.”
- “Knowledge management. Similar to time management, it is the organization and thoughtful interpretation of the information available. The ‘internet age’ has tremendously expanded the amount of available information and people need to be able to organize what is true and important.”
- “Interpersonal Skills.”
- “The basic skills of animal agriculture are very important and not taught to all students.”
- “Math, computer technology, providing written content.”
- “Being able to read, write and speak English.”
- “Appropriate appearance/attire on the jobsite; good work ethic, honest, no drug problems.”

Manufacturing Value Chain – Design

- “Design. You can’t be in this field if you can’t problem solve through an artistic eye.”
- “Relating those skills to IT issues, EXCEL, AutoCAD, Green [Specifications], Specification writing. Green Specifications for Green Products are known for sustainability and compliance with green criteria [Leadership and Energy Environmental Design] LEED or similar rating system. To get Platinum, Gold, Silver or Bronze ratings you have to get the points associated with the use of such product. Then you tally the points and get a rating. During construction you must have a LEED or GREEN co-coordinator to verify the actual use of those products in the construction of the project and verify if a substitute is used it meets the points that were specified. It’s a specialty subset that requires specific skills.”
- “English (reading, writing and speaking); Mathematics (trigonometry, advanced geometry and calculus); Physics; Earth Science; Technical Skills.”

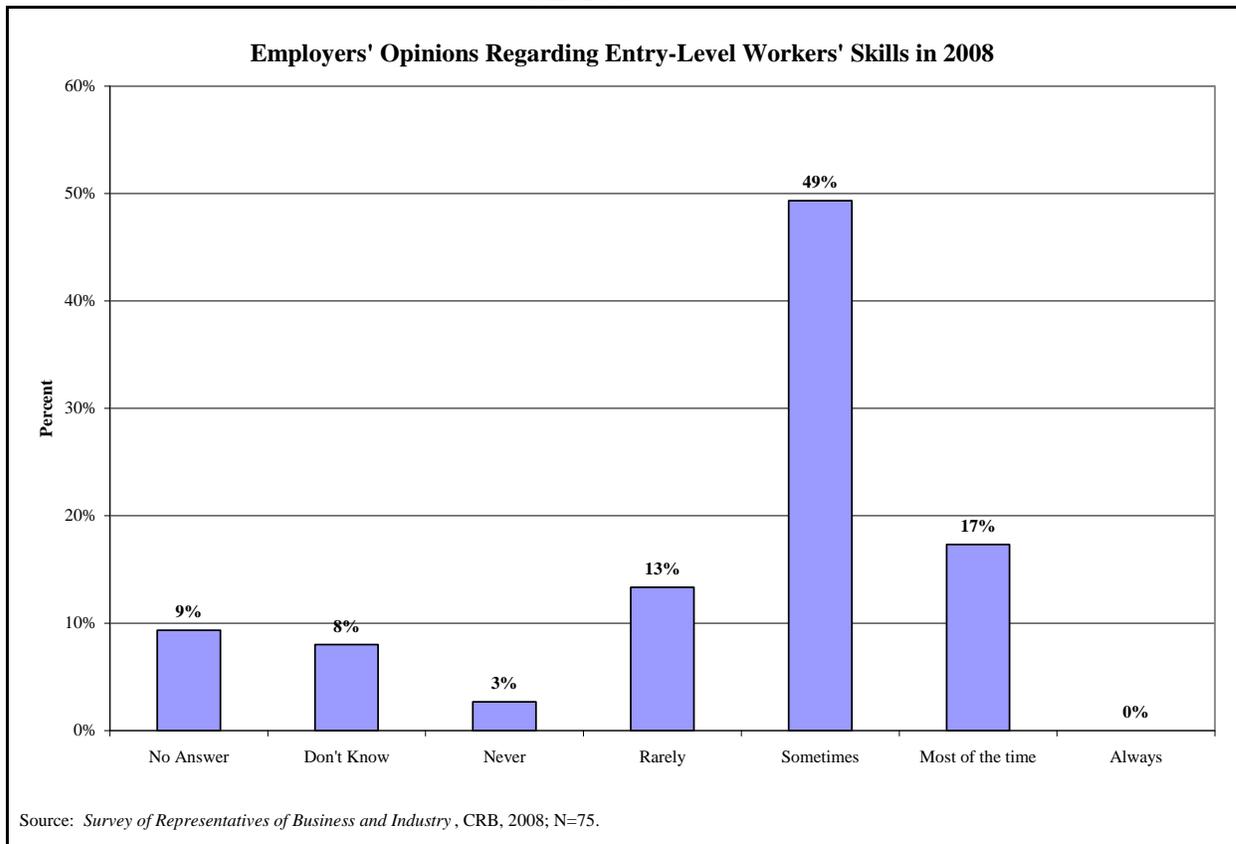
- “Writing and Spelling; Mathematics.”
- “Add math and chemistry.”
- “Basic life and physical science.”
- “Communication skills with attention on writing.”
- “The rubric of ‘reviewing related information,’ in the problem solving dimension above, can contain a voluminous body of knowledge. Schools and organizations that break down that information, train users in its application, and make it accessible to the beginner are part of this skill circle.”
- “Specific technical skills, such as a degree in engineering or business.”
- “Fundraising; interpersonal communication; collaboration with other similar and not-so-similar groups; lobbying, policy and advocacy; coaching and building capacity of staff; understanding financial systems.”

Retail Trade

- “Computer skills.”
- “Actual hands-on skills. All the items listed above are what are needed for any occupation. Critical thinking is part of it, but the application of the critical thinking is also a skill. Sales skills are also an instrumental part of this industry, but they are a culmination of other skills listed.”

Chart 8 shows employers’ rating of whether entry-level workers possess the necessary skills to perform their jobs. About two-thirds of the respondents thought that entry-level workers “sometimes” or “most of the time,” about ten percent “rarely” thought so, and three percent thought they “never” did. None of the respondents thought that entry-level workers “always” did.

Chart 8



When queried whether there is one or more occupations in their firm or the firms they represented that would be suitable to hire or at least provide an internship opportunity for high school students, about 40 percent of employers responded affirmatively, about 30 percent responded negatively, and another 30 percent did not know or did not answer the question. The survey further probed respondents who agreed whether there were opportunities for employing or providing internships to high school students. They offered a wide range of suggestions, including:

- “Promotion, design, outreach, communication with other publishers for mutual benefits.”
- “Housekeeping, food service, labor.” (Health Science and Services)
- “Entry-level care givers, clerical support. Due to regulations, there are limits to the amount and type of care a high school student can perform.” (Health Science and Services)
- “Nurse assistant, aid.”
- “Low-level administrative support. Non-technical jobs.”
- “In an effort to prepare a world-class scientific workforce for Southern California, the San Diego Workforce Partnership, in collaboration with the U.S. Department of Labor

and BIOCOM, developed the Life Sciences Summer Institute (LSSI), a program that exposes students and teachers to the life science industry. Created in 2005, LSSI connects upper-level high school, university and community college students, as well as high school and community college teachers, with leading companies within San Diego's life sciences community. Over the past four summers, the LSSI student internship program has pre-trained and placed a total of 168 students into hands-on industry internship experiences, while the LSSI teacher externship program has trained a total of 70 teachers with the potential to expose over 16,000 students to new biotechnology curriculum and career information by the end of the 2007-2008 school year. As a result of the LSSI programs: High school students who lacked direction now see the life sciences as a potential career path; 20 percent of the college students have continued to work either part or full-time for the company where they interned; and research performed in participant companies, as a result of the mentorship process, has yielded patents that may influence additional job creation. Participating Companies: Accumetrics, Alexion Antibody Technologies, Amgen Foundation, Anadys Pharmaceuticals, Arena Pharmaceuticals, Assure Controls Inc., Biogen Idec, BioServ Corporation, Burnham Institute for Medical Research, Conatus Pharmaceuticals, Conservation and Research for Endangered Species (CRES), The Dow Chemical Company, eStudySite, Genentech, Genomatica, Genoptix, Gen-Probe, Invitrogen Corporation, Isis Pharmaceuticals, Karl Strauss Brewing Company, Metabasis Therapeutics, Mo BIO Laboratories, Nanogen, Pfizer, Salk Institute for Biological Studies, San Diego State University Labs, Senomyx, SGX Pharmaceuticals, SCBC Miramar, Sunrise Science Products, The Scripps Research Institute.”

- “There are opportunities for students to intern in many aspects of the industry that do not have age limitations.” (Manufacturing Value Chain – *Logistics*)
- “Freight Forwarding industry and Customhouse Brokerage companies.”
- “Some architectural firms hire high school students as interns.”
- “Related areas: - Construction - Construction Management.”
- “Engineer’s assistant, Project Manager Assistant, Drafter.”
- “They’re usually clerical or labor-based.”
- “Warehouse distribution centers, office data processing.”
- “Both in fresh fruit packing and office clerical assistance.”
- “Occasionally dealerships hire students for lot work, such as cleaning vehicles and light office work. There are restrictions on sales and insurance reasons to restrict students from driving.”
- “Automotive technicians.”

Next, the survey asked respondents whether there exists one or more ways for high school students or entry-level workers to enter and advance their way into the industries represented by respondents. More than 60 percent agreed, while almost 30 percent disagreed or did not know. Some employers suggested that “entry-level” employment in

their industries meant a postsecondary education, while others pointed to specific ways that recent high school graduates could begin working in their industries such as job shadowing, internships, summer or part-time employment, apprenticeship, and on-the-job training. Some other examples by industry include:

Basic Information Services

- “Write, write, write, write, write, and write. Read well and much.”

Health Science and Services

- “[My organization] has an active workforce development program with its labor management workforce.”
- “Critical jobs require college education or at least technical training.”
- “They can enter as clerks to the pharmacy. But anything further such as a technician or pharmacist, schooling is involved.”
- “Students potentially could provide back office functions in physician offices; some do part-time medical assisting.”
- “Advanced education and training.”

Manufacturing Value Chain – Logistics

- “Because of the specialized nature of the industry, many are trained within the industry and have opportunities to advance.”
- “As a helper/packer.”
- “On the job training in varied functions.”

Manufacturing Value Chain – Production

- “There are always openings for entry-level workers in the meat packing and processing business. In fact, due to the difficulty of the work, turnover is quite high.”
- “Starting at the bottom and working their way up!”
- “Field operations, packing operations, sales assistance operations.”

Manufacturing Value Chain – Design

- “On-site training, but then go to an accredited college to learn the necessary tools to advance within the profession.”
- “Intern in a firm, participate in a ‘Built Environmental Education’ Program (BEEP).”
- “School of Hard Knocks, sign up and start working in small firms.”

- “By going to college and getting an Engineering degree. By starting with a technical skill and learning on the job.”
- “Obtain a bachelor’s and preferably a master’s degree from an [Accreditation Board for Engineering and Technology] ABET-accredited civil engineering college or university.”
- “AutoCAD drafters (but hiring high school people in the civil engineering career field is VERY rare since we can typically hire college students in the [civil engineering] program).”
- “College/university or apprenticeship which may lead to licensure.”
- “The most common is for the candidate to complete at least a bachelor’s degree in engineering or science.”
- “Acquire bachelors or advanced degrees from accredited universities.”
- “Attend a college specializing in Fire Protection [Worcester or Maryland or one of the international schools]. Know someone in the industry and decide to take an engineering or scientific degree ...”
- “Search out on the Internet organizations that are of interest and see if there are meetings or ways to meet with these organizations.”
- “1. Get a BS or BA degree. 2. Get an AA or similar degree, and then get an entry-level job at a large company. If they are intelligent and lucky they may work up to the level of a consultant in this field.”
- “Entry-level workers may have opportunities in the insurance industry due to an initial lower salary and learning curve.”
- “Through volunteerism. Building skills in specific abilities like fundraising. Gaining a college degree. We are an industry where it is difficult to get very far up the ladder without a degree.”

Retail Trade

- “Performance-based sales or quantity/quality of technical work performed.”
- “Any student can start working at a dealership and advance either to a service position or sales. It is not uncommon for someone to stay in the industry to the point of ownership from an entry-level position.”
- “Several top-level executives in companies throughout the state began with their company as a box boy/bagger and worked their way through management.”

Summary of Skills

When presented with the CRB's analysis of the top third job most commonly identified job skills that corresponded to the fastest growing and largest occupations in their industries, the majority of respondents agreed with the analysis. In addition, they suggested other important job skills including basic reading, writing, math, and science as well as critical reasoning, computer skills, and interpersonal and teamwork skills. When asked whether entry-level workers possess the necessary skills to perform their jobs, about two-thirds of the respondents agreed that they do "sometimes" or "most of the time." About 40 percent of employers agreed that there was one or more occupations in their firm or the firms they represented that would be suitable to hire or at least provide an internship opportunity for high school students.

More than 60 percent of employers agreed there are one or more ways for high school students or entry-level workers to enter and advance in their industries. Some employers suggested that "entry-level" employment in their industries meant a postsecondary education, while others pointed to specific ways that recent high school graduates could begin working in their industries such as job shadowing, internships, summer or part-time employment, apprenticeship, and on-the-job training.

EMERGING TRENDS

The final section of the employer survey probed representatives of business and industry about: 1) any emerging trends that might have affected occupations or job skills in the industries they represented, 2) how responsive CEOs in their industries were to possible trends and 3) what, if any, changes had been made as a result of identified emerging trends. The survey then asked respondents about the presence of any pressures to leave California. If the respondents confirmed the existence of pressures to leave, the survey inquired whether the pressures had affected their firms' ability, or the firms they represented, to employ students leaving high school with their current level of skill.

Trends

When queried about any emerging trends that might affect occupations or needed job skills in their industries, about 70 percent of the respondents agreed with emerging trends, as seen in Table 12.

Table 12

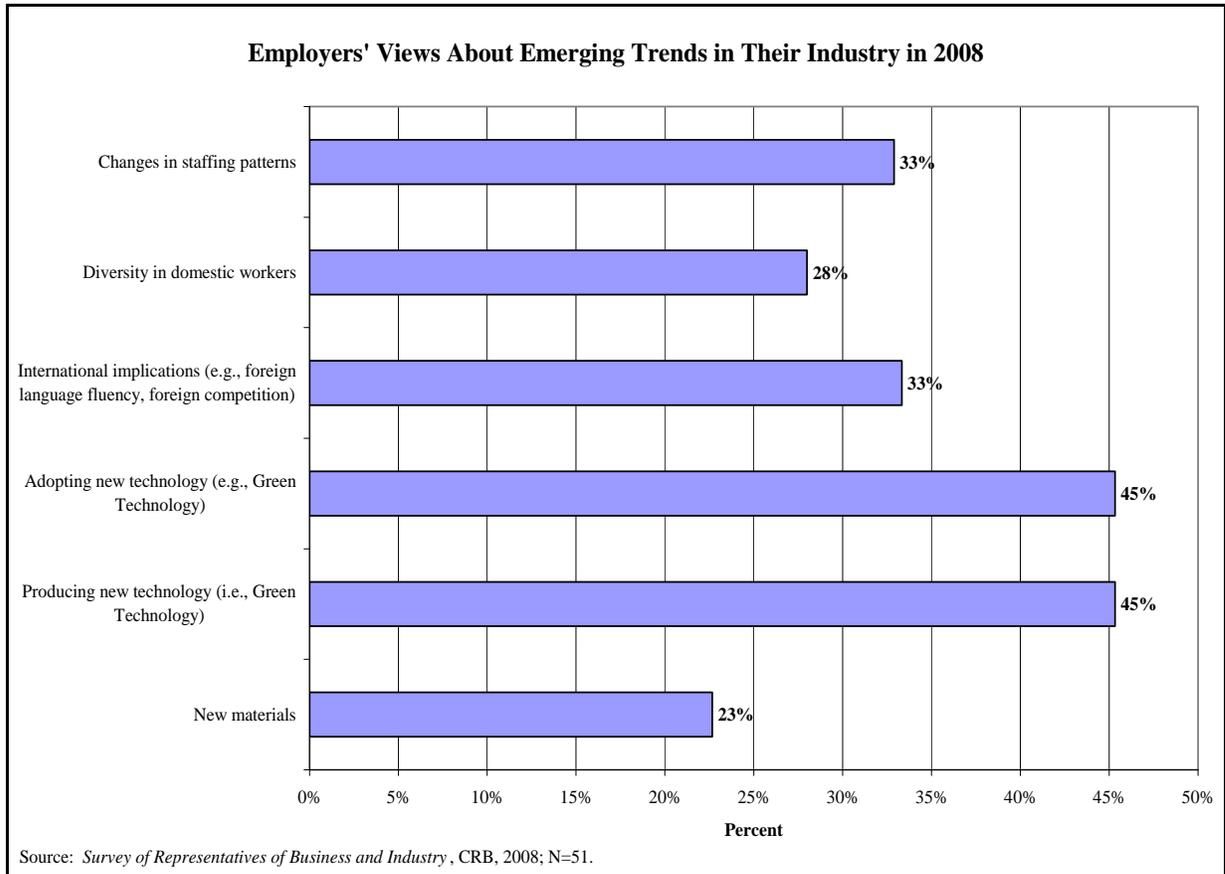
Business/Industry Views of Existence of Emerging Trends in Their Industries	
Response	Percent
Yes	68%
No	7%
Don't Know	15%
No Answer	11%
Total	100%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=75.

Of those who agreed, they were provided a list of possible sources of emerging trends, from which they could choose as many options as they considered appropriate to their industries. Chart 9 shows:

- Almost half of the respondents reported that producing or adopting new technology were trends they foresaw (45 percent each).
- A third indicated that changes in staffing patterns and international implications were trends they foresaw as affecting jobs or necessary job skills in their industries.

Chart 9



Several additional written comments addressed issues concerning an older workforce that will be retiring within the next 5-10 years, need for infrastructure investments, and the existence of regulations and fees. Other comments included:

- “Emergence and growing acceptance of print-on-demand technology. Growth of Internet-based promotional and marketing methods adaptable by independent publishers.”
- “Reimbursements for products i.e., prescription drugs are becoming so low that companies are losing money. Pharmacy and the way pharmacy is practiced will change dramatically in the next 5 years.”
- “International trade is expanding and there is a big lack of qualified workers in this area.”
- “The assessment of more & more cargo fees by the elected officials in Sacramento is driving cargo to other gateway ports!”
- “New technology would also include the integration of new computer software techniques (i.e. Building Information Modeling).”
- “Massive increases in funding for infrastructure via the passage of infrastructure bond initiatives will create a need for many more engineers.”

- “High school students are not choosing technical careers as much as they used to. That is creating a deficit of trained civil engineers in California and America.”
- “Environmental, energy, and government regulations.”
- “Entry-level into Fire Protection [median of all reporting in the U.S.] to [my organization] in 2007 was \$40,000. I have had two recent projects in which the use of new and ‘green’ products was the reason for my involvement. I worked internationally for 7 years and know that growth continues... Most companies with which I work have diversity programs and undergo constant reorganization which changes the way they have customers or staff interact.”
- “Food safety.”
- “An increasing anti-business attitude from the legislature could affect the viability and future of businesses.”
- “The retail auto industry will undergo radical changes in vehicle technology over the next decade and a well-trained workforce will be critical to the sales and repair of such vehicles.”
- “Adding more value-added departments in stores (i.e., pharmacies).”

Responsiveness of Representatives of Business and Industry to Emerging Trends

Table 13 shows that when asked to rate the extent to which industry CEOs are responsive to emerging trends, more than 70 percent of respondents indicated that CEOs were “responsive” or “very responsive” to emerging trends.

Table 13

Business/Industry Views Regarding Responsiveness of CEOs to Emerging Trends	
Response	Percent
Not responsive at all	1%
Somewhat responsive	9%
Responsive	23%
Very responsive	48%
Don't Know	5%
No Answer	13%
Total	100%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=75.

The survey then inquired for those respondents who indicated that CEOs were responsive or very responsive to explain how the CEOs were conducting business differently as a result of emerging trends. Their comments included themes such as keeping up with new

technologies, providing education and training opportunities, screening new applicants better, doing succession planning for retirees, restructuring to create efficiencies, providing greater diversity of services to keep competitive, and offering telecommuting to workers. Below are some of the respondents' comments by industry cluster.

Basic Information Services

- “Not enough space to describe all of the changes happening now and projected. Education, Internet and technology savvy is paramount.”
- “Deregulation or lessened regulation of providers of wholesale inputs (large incumbent providers). Providers of wholesale inputs are also competitors. Industry consolidation. Significantly decreased access to capital. Emergence of competition from providers who do not need wholesale inputs (e.g., cable operators).”
- “Emphasizing continuing education and training.”

Health Science and Services

- “Investing resources into workforce development and education of employees and the community.”
- “Providing educational session and updates of emerging trends.”
- “Working with local schools of nursing to fund increased educational capacity. Providing residencies for new graduates. Increasing flexibility in staffing and scheduling to retain an older workforce.”
- “Stopped hiring vocational nurses for acute care.”
- “Technology, work processes – this is a very rapidly changing environment requiring new skills.”
- “Participating with educational institutions in planning and even sponsoring training programs to meet needs.”
- “Working with other organizations in the profession as well as through legislation to change the way pharmacists' bill.”
- “If I consider the ‘CEOs’ to be our physician members, I would say they are tending to practice the way they have since the 50s, in terms of how they work with their employees. Primary care physician income is so low they do not invest much in employees, leading to turnover and errors.”
- “Hiring individuals with advanced training and technical skills, providing training to incumbent workers to keep up with emerging technologies.”
- “More folks are working from home.”

Manufacturing Value Chain – Logistics

- “Compliance with regulations and also the continued efforts to promote better practices.”
- “On-the-job training due to lack of qualified people.”
- “As a result of the current economic slowdown movers are offering a greater diversity of service.”
- “We are establishing new trends in systems design by reaching out to new technology.”
- “Screening applicants more carefully as to job skills.”

Manufacturing Value Chain – Production

- “We are very concerned with environmental regulations and have taken steps necessary to be beyond compliance. We also work hard to protect the safety of all of our employees.”
- “These trends are widely available and in the news every day. The U.S. is in a major skills deficiency trend. A 24% dropout rate from high school does not help. Companies are going out of California to find skilled workers at an affordable price and finding them.”
- “We track the trends, educate our members, link companies to experts, work with other association and hold multiple conferences, seminars and conventions annually.”
- “Cross training employees, and re-examining the skills requirements for hiring.”
- “Partnering with Trade Tech / Schools.”
- “Restructuring of major business units.”
- “Education on emerging business trends.”

Manufacturing Value Chain – Design

- “Integrating associated technology and conducting additional ongoing training for staff.”
- “Technology is changing and architects need to be on the cutting edge ... think out of the box.”
- “Learning more and actively implementing green technology in firm culture, ex: adopting [Leadership and Energy Environmental Design] LEED standards for projects. LEED is a certification program for buildings that meets certain criteria for sustainability goals. Read more about it at www.usgbc.org.”
- “Codes and requirements, products are changing daily and keeping up-to-date is mandatory.”

- “Continuing education, integrating their practices, recruiting employees with emerging competencies and skill sets.”
- “Seminars, continuing education.”
- “New information and design methods are updated all the time and if you don't keep up you will not be competitive.”
- “As with any industry, companies need to respond to new trends and methodologies.”
- “New branches and departments are being established to focus on sustainability and green technologies in many civil engineering firms.”
- “New trends and information cause our design concepts to change over time.”
- “Now doing greenhouse gas emission studies related to global climate change as a result of an emerging trend.”
- “[Our organization] continues to focus on research and grow internationally. The CEO came from the international community, as well as many in the upper tiers of management. I wish to restrict my travel due to the joy of grandfatherhood, but still am able to get other mothers to cover for me when a short job abroad comes up. [My organization] calls their 8x yearly electronic and print magazine ‘Emerging Trends’.”
- “Internships are offered.”
- “Many of our members have lost work to other countries or other states. They are responding by offering higher quality, full service, or lower rates.”
- “Succession planning is very important to our industry.”

Retail Trade

- “Selling as many high [miles per gallon] mpg vehicles as we can get our hands on.”
- “Keeping up with industry trends is always an issue. Language barriers, customer needs (bad credit), and other issues are always being addressed and adapted.”

Pressures

The survey asked respondents to rate whether their firm or the firms in their industry faced any pressures to leave California, and to rate their response on a scale of “no pressures at all” to “facing enormous pressures.” Table 14 shows that about 40 percent of the respondents indicated that they faced no pressures. For example, one respondent revealed that because he is the CEO of a county hospital the question did not apply to his circumstance. Approximately 30 percent of the respondents reported “some pressures” and 13 percent believed that their firm or the firms in their industry faced “enormous pressures.”

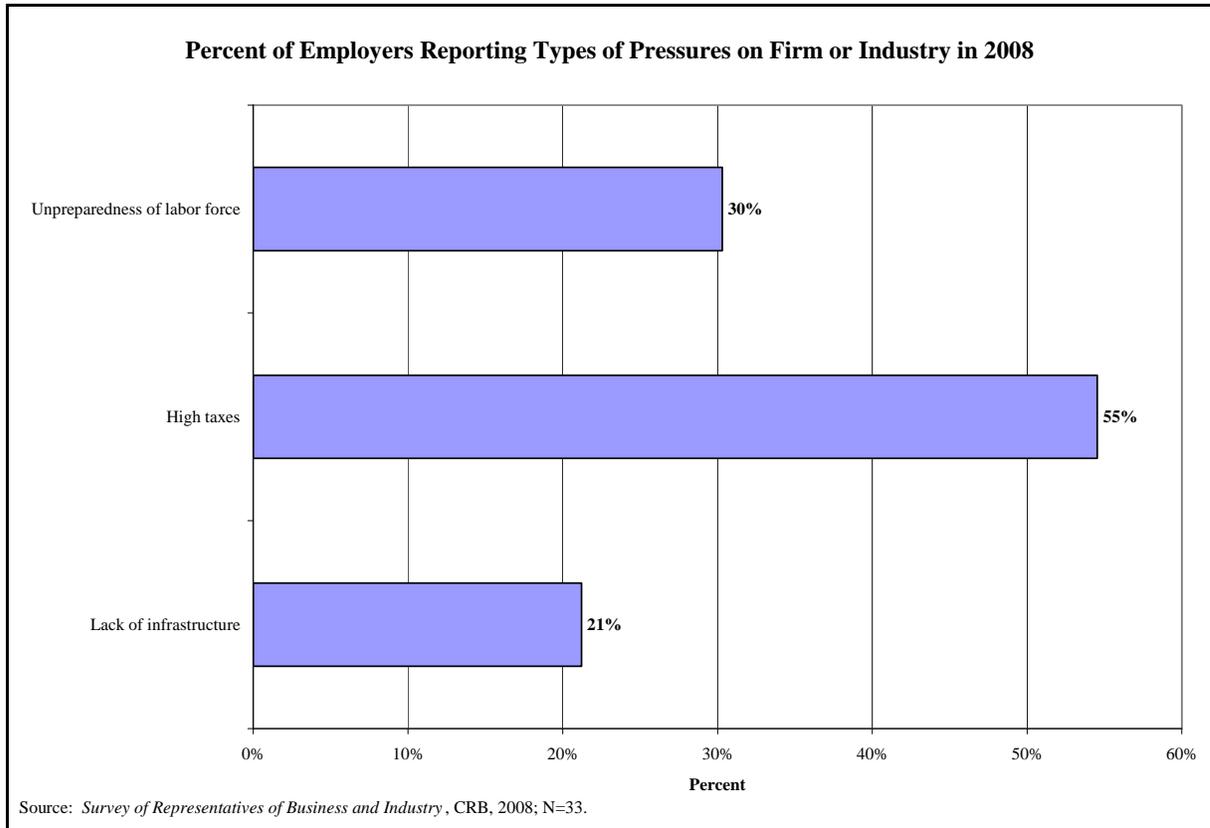
Table 14

Business/Industry View of Pressures Facing Their Industries	
Response	Percent
No pressures at all	39%
Some pressures	27%
Facing enormous pressures	13%
Don't Know	4%
No Answer	17%
Total	100%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=75.

Among those respondents who indicated that their firm or firms in their industry faced some or enormous pressures to leave, the majority of the respondents believed that their pressures resulted from higher taxes, about thirty percent reported that pressures were due to the unpreparedness of the labor force, and about 20 percent thought it was due to a lack of infrastructure, as seen in Chart 10.

Chart 10



The survey asked respondents to elaborate on their responses, which produced the following themes: the high cost of living in the state (i.e., housing and transportation), unfriendly legislation, unreasonable regulations or fees, lack of educated workers, high cost of infrastructure building, need for tax incentives (i.e., single sales factor), and outsourcing of workers. The following examples provide a sampling of the respondents' specific comments.

- “Lack of sufficiently educated workers for the job. Unreasonable levels of regulation by state upon industry. Inflexible worker rules related to [the Industrial Welfare Commission] IWC, etc.”
- “High taxes in some cities but mainly the lack of reimbursements through the state Medi-Cal program which is for the poor is causing many pharmacies to close but mail order pharmacies are opening in other states. The low reimbursement from Medi-Cal is having an effect on the reimbursement from 3rd party payers (HMOs, PPOs, etc).”
- “Insurance system that pays primary care 14% less than physicians in the rest of the country, while cost of living is among the highest.”
- “The economic benefit to a state of having a life science cluster is indisputable. Life science companies provide high-wage jobs with benefits to their employees and are renowned for being positive influences in their communities. The ties that life science companies have with the universities in their region provide an avenue for additional

revenue through technology transfers and federal research grants. Almost every state and many countries are clamoring to attract the industry and offering incentives to make their region the most attractive place for the next company to locate. The cost of building and operating a life science facility is extremely expensive, laboratories being some of the most costly office space to develop. The expense associated with research and development activities makes enormous investment in this industry necessary. It is also critical that companies be able to conserve their capital. Therefore, states that have favorable tax policies have an advantage when attempting to recruit companies. There are a number of tax incentive options that have proven track records of spurring economic growth. Among them are the research and development tax credit (R&D), the net operating loss tax credit (NOL), and implementation of a single sales factor corporate tax apportionment (the current practice in some form in 18 other states). California formerly offered employers a manufacturing investment credit, but it was allowed to expire at the end of 2003. Additionally, California is one of only four states whose net operating loss tax codes do not conform to the more favorable federal codes. California currently assesses corporate tax based on a three-pronged formula. A company's taxes are based on a ratio of its payroll, property, and sales (which are double weighted, or counted twice) within California to that same factor worldwide. This system encourages companies to reduce employment and investment in California and incentivizes expansion in states with more favorable tax treatment towards property and payroll. A potential remedy for this situation is moving to a single sales factor to apportion California corporate income tax. California's main competition in the biotechnology sector, Maryland, Massachusetts, and Texas, all already offer the single sales factor. It is critical that if California is to be competitive in attracting and retaining biotech manufacturing, that its tax policies be made competitive with those states actively marketing themselves as biotech-friendly. With 38 states that have implemented tax incentives and economic development strategies aimed at attracting life science companies, the state of California is at a disadvantage in not only attracting new companies but in retaining the ones we have as they move from small research-based operations to the next stage - large companies with commercialized products. While maintaining its prowess as a research powerhouse should be a priority for California, the state's economy stands to lose a tremendous amount by allowing manufacturing jobs to be located elsewhere."

- "There are infrastructure and regulation and fees that are enormous challenges."
- "The [International Longshore and Warehouse Union] ILWU and the Legislature."
- "Expensive housing, lack of efficient transportation, degrading quality of life from increasing population impacts."
- "Engineering work can be 'transported' across state and country lines (outsourcing). So as the demand for more civil engineers grows and the supply of trained engineers decreases, companies will outsource more of their work."
- "The clients our membership serves are facing pressure to leave due to high costs and regulations (environmental). Our members are leaving the state because they can't get properly licensed in Agricultural Engineering (A/E), our discipline, without a 'second class' status. Some firms are hiring from outside the state because they need a part of the A/E skill set not often taught or sought in our colleges (despite the need)."

- “The State Engineers’ Act is broken. It says, by law, you need to hire a Civil Engineer to either conduct, learn how to do work, or supervise work for which they have no technical knowledge. As a result, if industry follows the law, they need to spend more money to train a civil engineer to do work for which they have no knowledge.”
- “Fire Protection Engineers (FPEs) can locate anywhere, but are a skill set whose practice generally would need to be in the area of the California clients whom they serve. California-based FPEs often travel to serve international clients and vice versa – FPEs from out of state may practice here.”
- “Change in economics and specific industries that may be affected.”
- “The shipbuilding site would be nearly impossible to move, however we are aware of development encroachment on the ‘working waterfront’ and are working with other water-dependent businesses to educate the public as to the importance of maintaining industry along the waterfront as part of a balanced port.”
- “The meat industry faces enormous pressure in California due to the controversial nature of the industry.”
- “Regulations being created by those individuals who don’t understand or care to learn about the industry.”
- “Anti-business climate of the legislators, and lack of interest in making any changes at all in the curricula.”
- “Water supply, utility costs.”
- “As California retailers, we won't leave but the costs of regulatory compliance are choking our profitability.”
- “New, unfriendly legislation that makes business in California difficult.”

The final set of questions in the employer survey asked respondents whether “emerging trends” or the “pressures to change” affected their company’s ability or the ability of the companies in the industries they represented to use students leaving high school with their current level of skills.

Table 15

Business/Industry Views of Impacts of Emerging Trends or Pressures to Change and Using Students Leaving High School	
Response	Percent
Yes	33%
No	31%
Don't Know	20%
No Answer	16%
Total	100%

Source: *Survey of Representatives of Business and Industry*, CRB, 2008; N=75.

Table 15 indicates that about a third of the respondents had evenly split their responses between agreeing and disagreeing. Another third of respondents did not answer or did not know; suggesting that on balance, the presence of pressures or emerging trends had little bearing on these respondents' views about employing students leaving high school. When asked to elaborate on their response, many respondents reiterated their opinions that a high school education was not a sufficient criterion for them to hire a graduate and that additional education and training was necessary. They offered the following specific comments:

- “Recent high school students, no matter how skilled, are generally useless to independent publishers except maybe as an occasional gofer.”
- “Somewhat constant redefining of the publishing world, with more challenging issues.”
- “Occupations in healthcare are highly regulated.”
- “Very few jobs open to people right out of high school.”
- “While the students are technically savvy, they lack the soft skills needed to care for our patients.”
- “Staffing ratios have reduced the use of entry-level unlicensed personnel in our hospitals. This was a great ‘growing ground’ for people interested in nursing.”
- “Physicians need motivated, educated staff with technology skills – interpersonal skills as well. Reading and writing skills are not overly evident in today’s graduates.”
- “Locally and nationally, we are in the midst of a math and science education crisis. We are seeing a steadily decreasing number of young people pursuing degrees and careers in math and science at a time when industry demand and global competition are at an all time high. This promises to not only become a workforce challenge but an issue that will impact our ability to remain a world leader in science, technology and innovation. The state of California and the United States must brace for an ever-widening gap between labor supply and demand (with projections of a national 35 million worker shortfall by

2030). In doing so, we must ensure that all of our young people are educated at a level that will enable them to compete for the high-skilled jobs that are being created within the life sciences industry. Our ability to produce a world-class workforce for the San Diego life sciences community is rooted in a long-term investment in education and training. This investment must be made at all academic levels and must ensure that schools have the funding to update laboratory equipment and technology, develop new programs as new occupational needs emerge and get students and teachers out of the classroom to gain hands-on industry experience. Statewide minimum standards for community college certificates and degrees in biotechnology are needed to ensure that those trained for manufacturing and laboratory-related positions have the skills needed to fill the positions being created within California's biotechnology industry."

- "If they do not have skills, they can be trained providing they have a business attitude."
- "The graduates come out without basic skills!"
- "High school students don't have the skills to work in our industry. You need advanced training."
- "Not sure high school students are adequately prepared/have skills to be hired in a firm immediately out of school."
- "To be clear, our firm utilizes college educated students - not high school educated."
- "To be effective in the civil engineering field, a high school student needs to be trained in engineering principles and problem solving. Thereafter due to the competitive nature and integration of disciplines a master's degree becomes essential."
- "They don't have enough skill to be useful."
- "If you strike [high school] and insert college. Our [high school] H.S. students need to know that our college programs exist and lead to great jobs!"
- "[W]e have had more accidents in the process industry due to lack of qualified staff."
- "Some level of college education is useful or focused interest in building or CAD skills."
- "We need students graduating that are better trained in life and physical science, basic math, interpersonal flexibility, and problem-solving skills."
- "I don't see high school students as able to demonstrate the complex problem-solving skills and maturity to be seen as capable by clients."
- "High school students are not qualified. A BS or BA degree is the minimum requirement."
- "The lack of exposure to career technical education and opportunities to pursue quality, living-wage career paths has the greatest influence on our ability to utilize students directly out of high school."
- "Anyone entering the meat industry receives on-the-job training."

- “The curricula and brains of the educators have not been opened up to the new realities. The educators need re-education in the way of business.”
- “We provide extensive training to entry-level positions.” (Food production)
- “Trend is for high school students to be less prepared to enter workforce.”
- “Many positions within the organization require more than a high school level.”
- “Students need to be trained in green technology to succeed at dealerships.” (Retail)

Summary of Emerging Trends

The final section of the employer survey asked respondents about: 1) emerging trends that might affect the occupations or job skills in their industries; 2) how responsive CEOs in their industries were to these trends; and 3) what, if any, changes had been made as a result of identifying these emerging trends. Survey questions also inquired about the presence of any pressures to leave California, and the impacts the pressures might have on their ability to employ students leaving high school, given their current skill levels.

About 70 percent of the respondents recognized the existence of emerging trends facing their industries. Of those who agreed, almost half of the respondents reported that producing or adopting new technology were important trends; and a third each indicated that changes in staffing patterns and international implications were trends they foresaw as affecting jobs or necessary job skills in their industries.

Several additional written comments addressed other issues: an older workforce that will be retiring within the next 5-10 years, the need for infrastructure investments, and the existence of excessive regulations and fees. When asked to rate the extent to which industry CEOs were responsive to emerging trends, more than 70 percent of respondents indicated that CEOs were “responsive” or “very responsive.” They explained how CEOs were conducting business differently as a result of emerging trends, by keeping up with new technologies, providing education and training opportunities for employees, screening job applicants better, undertaking succession planning for retirees, restructuring operations to create efficiencies, providing a greater diversity of services to keep competitive, and offering telecommuting to workers.

When asked to rate whether their firm or the firms in their industry faced any pressures to leave California, about 40 percent of the responding employers indicated that they face no pressure. Approximately 30 percent reported facing “some pressures,” and 13 percent stated that their firm or the firms in their industries face “enormous pressures.”

Among those respondents whose firms face some or enormous pressures to leave the state, the majority asserted that the pressures resulted from higher taxes; about 30 percent reported that pressures were due to the unpreparedness of the labor force, and about 20 percent thought the pressures were due to a lack of infrastructure. Other themes that emerged include: the high cost of living in the state (i.e., housing and transportation), unfriendly legislation, unreasonable regulations or fees, lack of educated workers, the high cost of infrastructure building, the need for tax incentives (i.e., single sales factor), and outsourcing of workers.

The final set of questions in the employer survey asked whether “emerging trends” or the “pressures to change” affected their company’s ability or the ability of the companies in their industries to employ students leaving high school with their current level of skills. Responses were equally split between agreeing and disagreeing. When asked to elaborate on their responses, many respondents reiterated their opinions that a high school education was not sufficient for them to hire a graduate and that additional education and training were necessary.

Appendix 1: California Map of Nine Economic Regions*

California Economic Strategy Panel Regions



* California Labor and Workforce Development Agency, Economic Strategy Panel, *California Economic Regions*. See: http://www.labor.ca.gov/panel/pdf/CESP_Regions_100606.pdf.

Appendix 2: Selected Industry Clusters and Sectors

I. Basic Information Services

A. Telecommunications

- Wireless (Southern Border Region)
- Resellers (Greater Sacramento Region and Bay Area Region)

B. Publishing

- Newspaper, Book & Directory Publishers (Greater Sacramento Region and Southern Border Region)
- Software Publishers (Bay Area Region)

II. Manufacturing Value Chain

A. Logistics

1. General Freight Trucking (Northern Sacramento Valley Region, Southern California Region, and San Joaquin Valley Region)
2. Warehousing & Storage (Northern Sacramento Valley Region, Greater Sacramento Region, Southern California Region, Southern Border Region, and San Joaquin Valley Region)
3. Scheduled Air Transportation (Bay Area Region)
4. Couriers (Greater Sacramento Region, Bay Area Region, and Southern Border)

B. Production

1. Sawmills & Wood Preservation (Northern Sacramento Valley Region)
2. Fruit & Vegetable Preserving & Specialty Food Manufacturing (Northern Sacramento Valley Region and San Joaquin Valley Region)
3. Animal Slaughtering & Processing (San Joaquin Valley Region)
4. Computer & Peripheral Equipment Manufacturing (Bay Area Region and Greater Sacramento Region)
5. Semiconductor & Other Electronic Components (Bay Area Region, Greater Sacramento Region, and Southern Border Region)
6. Electronic Instrument Manufacturing (Southern California Region and Southern Border Region)
7. Cut & Sew Apparel Manufacturing (Southern California Region)
8. Motor Vehicle Manufacturing (Bay Area Region)

C. Design

1. Architectural, Engineering & Related Services (Northern Sacramento Valley Region, Bay Area Region, Greater Sacramento Region, Southern California Region, Southern Border Region, and San Joaquin Valley Region)
2. Management, Scientific & Technical Consulting Services (Northern Sacramento Valley Region, Bay Area Region, Greater Sacramento Region, Southern California Region, Southern Border Region, and San Joaquin Valley Region)

III. Health Science and Services

- A. General Medical & Surgical Hospitals (All Regions)
- B. Offices of Physicians (All Regions)
- C. Science Research & Development (Bay Area Region and Southern Border Region)

IV. Retail Trade

- A. Grocery Stores (Northern California Region, Northern Sacramento Valley Region, Central Coast Region, San Joaquin Valley Region, and Central Sierra Region)
- B. Building Material & Supplies Dealers (Northern California Region)
- C. Department Stores (Northern Sacramento Valley Region, Central Coast Region, San Joaquin Valley Region, and Central Sierra Region)
- D. Automobile Dealers (San Joaquin Valley Region)

Appendix 3: O*Net Job Skills*

In order to successfully attain and hold a job, an individual must demonstrate a variety of characteristics, knowledge, and skills. These requirements are summarized by occupation on O*Net. In this analysis, knowledge represents the acquisition of facts and principles, and experience lays the foundation for establishing procedures to work with that knowledge. These procedures are more commonly known as skills. Skills may be further divided into basic skills and cross-functional skills. Basic skills, such as reading, facilitate the acquisition of new knowledge while cross-functional skills, such as problem solving, extend across a number of activities.

Basic Skills are defined as “Developed capacities that facilitate learning or the more rapid acquisition of knowledge.” They are broken down into content and process skills.

Content Skills – Background structures needed to work with and acquire more specific skills in a variety of different domains.

- **Reading Comprehension** – Understanding written sentences and paragraphs in work related documents.
- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Writing** – Communicating effectively in writing as appropriate for the needs of the audience.
- **Speaking** – Talking to others to convey information effectively.
- **Mathematics** – Using mathematics to solve problems.
- **Science** – Using scientific rules and methods to solve problems.

Process Skills – Procedures that contribute to the more rapid acquisition of knowledge and skill across a variety of domains.

- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
- **Learning Strategies** – Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.
- **Monitoring** – Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

* This information is taken from O*Net of the U.S. Department of Labor and can be viewed at: http://www.onetcenter.org/dl_files/ContentModel_DetailedDesc.pdf.

Cross-Functional Skills are defined as “Developed capacities that facilitate performance of activities that occur across jobs.” They are broken down into categories including social, complex problem solving, technical, systems, and resource management skills.

Social Skills – Developed capacities used to work with people to achieve goals.

- **Social Perceptiveness** – Being aware of others' reactions and understanding why they react as they do.
- **Coordination** – Adjusting actions in relation to others' actions.
- **Persuasion** – Persuading others to change their minds or behavior.
- **Negotiation** – Bringing others together and trying to reconcile differences.
- **Instructing** – Teaching others how to do something.
- **Service Orientation** – Actively looking for ways to help people.

Complex Problem Solving Skills – Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.

- **Complex Problem Solving** – Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Technical Skills – Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems.

- **Operations Analysis** – Analyzing needs and product requirements to create a design.
- **Technology Design** – Generating or adapting equipment and technology to serve user needs.
- **Equipment Selection** – Determining the kind of tools and equipment needed to do a job.
- **Installation** – Installing equipment, machines, wiring, or programs to meet specifications.
- **Programming** – Writing computer programs for various purposes.
- **Operation Monitoring** – Watching gauges, dials, or other indicators to make sure a machine is working properly.
- **Operation and Control** – Controlling operations of equipment or systems.
- **Equipment Maintenance** – Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
- **Troubleshooting** – Determining causes of operating errors and deciding what to do about it.
- **Repairing** – Repairing machines or systems using the needed tools.
- **Quality Control Analysis** – Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

Systems Skills – Developed capacities used to understand, monitor, and improve socio-technical systems.

- ***Judgment and Decision Making*** – Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- ***Systems Analysis*** – Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
- ***Systems Evaluation*** – Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

Resource Management Skills – Developed capacities used to allocate resources efficiently.

- ***Time Management*** – Managing one's own time and the time of others.
- ***Management of Financial Resources*** – Determining how money will be spent to get the work done, and accounting for these expenditures.
- ***Management of Material Resources*** – Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.
- ***Management of Personnel Resources*** – Motivating, developing, and directing people as they work, identifying the best people for the job.

Appendix 4: Employer Survey

Identical questions were posed to each representative of business and industry except those relating to the second objective of the employer survey, and these questions appear at the *end* of the survey, by each industry cluster and sector. The *content* of the questions (relating to the fastest growing and largest jobs and skills) differed by respondents' industry affiliation, but the wording of the questions was identical.

Employer Survey of Business and Industry Representatives

There are three main objectives for conducting this survey:

1. Determine what involvement businesses have with their local public K-12 schools.
2. Verify government collected information regarding the fastest growing and largest occupations through 2014, their corresponding skills and average annual wages.
3. Identify what the emerging trends are that may not be captured by the economic data currently available.

We are interested in gathering information from you regarding the industry sector you work in or represent. *None* of the information you provide will be attributed to you unless you give us permission to use your name. The information gathered will be used for research purposes only and will be compiled into a report that will be distributed to the Legislature, Governor, other interested policy stakeholders, and available to the public over the Internet.

Please provide your name, title, company/organization name, industry represented, and e-mail contact information.

Name _____

Title _____

Association or Company _____

Industry _____

E-mail contact _____

1. Please answer *one* of the two questions below.

If you are an industry representative, how many firms does your association represent?

0 1-10 11-25 26-50 51-100 101- 250 251-500 501+

If you represent a company, how many employees does your firm represent?

0 1-10 11-25 26-50 51-100 101- 250 251-500 501+

2. How many years have you worked in the industry you represent?

_____Less than one year _____1-4 years _____5-10 years _____11+ years

BUSINESS/SCHOOL PARTNERSHIPS

California law requires “local school boards maintaining any of grades 7 to 12, inclusive, to offer to all otherwise qualified pupils in those grades a course of study that provides an opportunity to attain entry-level employment skills in business or industry upon graduation from high school.”

1. In your opinion, do the existing educational programs adequately prepare high school students for employment in your industry? On a scale of 1 to 5 (1 as “not preparing students at all” and 4 as “preparing students very well”), please check a box below.

- 1 Not preparing students at all
2 Inadequately preparing students
3 Somewhat preparing students
4 Preparing students very well
5 Don't Know

- a. Please explain your response above.

2. We are interested in learning about any partnerships or relationships that firms in your industry have established with public middle or high schools, which may include the following activities:

- Serving as representatives on advisory committees
- Participating in Career Days
- Providing class speakers
- Providing opportunities for job shadowing
- Providing mentoring experiences at work sites
- Internships (paid or unpaid)

- Work experience
- Apprenticeship training
- Helping teachers to learn and teach the technology that business needs
- Providing input for curricular development

Has your business or other businesses in your industry that you represent established any school partnerships? Please check below.

_____ Yes _____ No _____ Don't Know

3. Does your business, or other businesses in the industry that you represent, work with an intermediary organization that facilitates these types of partnerships?

(An intermediary organization is defined as one-stop career center, local workforce investment board, chamber of commerce, local economic development agency, trade association, county office of education, etc.) Please check below.

_____ Yes _____ No _____ Don't Know

If "No" or "Don't Know," please skip down to question 6.

- a. If yes to either question, what kind of partnerships/relationships are your business, or other businesses that you represent, involved in? Please identify *all* that apply.

- Serving on advisory committees
- Participating in Career Days
- Providing class speakers
- Providing opportunities for job shadowing
- Providing mentoring experiences at work sites
- Providing internships (paid or unpaid)
- Providing work experience
- Providing apprenticeship training
- Helping teachers to learn and teach the technology that business needs
- Providing input for curricular development
- Other – Please describe.

- b. If yes, do you know how your business or other businesses in your industry got involved with the schools? Please check below.

_____ Yes _____ No _____ Don't Know

- c. If yes, please check *all* that apply.
- Through a parent who works at the business
 - The firms view their engagement as philanthropy and are willing to donate supplies, equipment or time to the schools.
 - The firm’s human resources office has an established process with the schools and this is considered as embedded “value” for the companies involved
 - A school contacted the business
 - A student approached the firm
 - Other – Please describe.
-
-

4. How beneficial have these partnerships/relationships been to business? On a scale of 1 to 5, please check (1 being “not beneficial at all” and 4 being “very beneficial”).

Partnership	1 - Not beneficial at all	2 - Somewhat beneficial	3 - Beneficial	4 - Very Beneficial	5 - Don't Know / Not Applicable
Serving on advisory committees					
Participating in Career Days					
Providing class speakers					
Providing opportunities for job shadowing					
Providing mentoring experiences at work sites					
Providing internships (paid or unpaid)					
Work Experience					
Providing apprenticeship training					
Helping teachers to learn and teach the technology that business needs					
Providing input for curricular development					
Other					

a. For those partnerships or relationships that you believe have been beneficial or very beneficial, how have the partnerships been beneficial to business?

- Opportunity to observe future employees
 - Opportunity to train potential future employees in the skills needed
 - Opportunity to build goodwill and visibility in the community
 - Other – Please describe.
-
-

b. For those partnerships or relationships that you believe have *not* been beneficial at all or somewhat beneficial, why have the partnerships not been beneficial to business?

- Difficulty in communicating with the school
 - Lack of time for staff to work with students
 - Students not dependable
 - Students do not have the skills needed to perform the work
 - Other – Please describe.
-

5. Do you think these partnerships with schools have been beneficial to the students involved? On a scale of 1 to 5, please specify (1 being “not beneficial at all” and 5 being “very beneficial to students”).

- 1 Not beneficial at all
- 2 Somewhat beneficial to students
- 3 Beneficial to students
- 4 Very beneficial to students
- 5 Don’t Know

a. If you indicated that the partnerships or relationships have been beneficial or very beneficial to students, can you describe how they have been beneficial to students? Please check *all* that apply.

- Students have been offered jobs
 - They provide incentives to students to complete their studies
 - Students gain an understanding of the industry they may be interested in working
 - They provide opportunities for students to be mentored by an adult
 - They provide opportunities for students to explore their career interests
 - They provide opportunities for students to learn work-related skills
 - They provide opportunities for students to apply their knowledge, abilities, or skills
 - Other – Please describe.
-

b. If you indicated that the partnerships or relationships have *not* been beneficial at all or somewhat beneficial to students, can you describe why? Please check ***all*** that apply.

- Students have many conflicting priorities
 - Lack of adequate transportation or cost of parking may be prohibitive
 - Schools do not provide sufficient organizational assistance to support the program
 - Other – Please describe.
-

6. If there have been no partnerships/relationships between your business (or businesses in your industry) and middle or high schools, what, if any, impediments exist to establishing such relationships?

Lack of Information or Interest (Please check ***all*** that apply.)

- Don't know who to contact at schools
- Unsure how to navigate the school system
- Contact has been made with school principals, but no local public middle or high school has shown any interest in establishing a partnership with us
- The schools have not recommended or referred any students interested in working in my industry
- Unsure we want to work with schools
- Never thought about getting involved with public middle or high schools

Resource Issues (Please check ***all*** that apply.)

- Firms do not have staff to initiate the effort of working with schools to recruit students for internships or work experience
 - Firms do not have the resources to dedicate staff to supervise or mentor students
 - Turnover in firms' staff that had the expertise in working with local schools
 - Turnover in school staff that had the expertise in working with local business and industry
 - Not enough facilities in the local businesses to accommodate training/mentoring of students
 - Not enough equipment or other necessary supplies to accommodate training/mentoring of students
 - Other – Please describe.
-

Transportation Issues (Please check *if it applies.*)

- There is no local middle or high school within a reasonable distance of my company or the firms in my industry

Other Impediments (Please check *all* that apply.)

- School schedules do not match with business schedules
 Insurance or liability issues exist
 Labor laws or regulatory issues that govern work permits or age requirements

Businesses in my industry do not have suitable work for middle or high school students. Instead businesses hire from:

- Community colleges
 CSU, UC, or private universities
 Technical schools
 Apprenticeship programs
 Adult schools
 Temporary Agencies
 Other – Please describe.
-
-

7. Do you think it would be useful for your business, or for the businesses in your industry that you represent, to establish a partnership with middle or high schools? Please check below.

_____ Yes _____ No _____ Don't Know

- a. If yes, what would help to get efforts underway? Please check *all* that apply.

- If my association were to provide firms with information about how to get involved, my firm might consider it
 If an intermediary organization (like a one-stop career center, local workforce investment board, chamber of commerce, local economic development agency, trade association, county office of education) were to provide firms with information about how to get involved, my firm might consider it
 Get more assistance from schools
 Establish a "1-800" number to gather information
 Other – Please describe.
-
-

- b. If not, why not?
-
-

EMERGING TRENDS

Data collected by the California Employment Development Department's Labor Market Information Division are based on historical industry employment patterns, so even with the most recent information available, it is somewhat dated.

1. Are there any emerging trends that might affect occupations or needed job skills in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

- a. If yes, please specify *all* that apply.

- New materials
 - Producing new technology (i.e., Green Technology)
 - Adopting new technology (i.e., Green Technology)
 - International implications (e.g., foreign language fluency, foreign competition)
 - Diversity in domestic workers
 - Changes in staffing patterns
 - Other – Please describe.
-
-

2. On a scale of 1 to 5, with 1 being “not responsive at all” and 4 being “very responsive,” is responding to emerging trends important to the CEO of your company or the CEOs in your industry?

- 1 Not responsive at all
- 2 Somewhat responsive
- 3 Responsive
- 4 Very responsive
- 5 Don't Know

3. If you indicated that the CEO of your firm, or the CEOs in the industry you represent, is/are "responsive" or "very responsive," how are you, or the companies you represent, conducting business differently as a result of these emerging trends? Please explain.
-
-

4. On a scale of 1 to 4, with 1 being “no pressures at all” and 3 being “facing enormous pressures,” is your company or industry facing pressures to leave California?

- 1 No pressures at all
- 2 Some pressures
- 3 Facing enormous pressures
- 4 Don't Know

5. If you indicated that your firm or the firms you represent is/are facing "some pressures" or "facing enormous pressures," can you explain what types of pressures they are? Please check *all* that apply.

- Lack of infrastructure
- High taxes
- Unpreparedness of labor force
- Other - Please describe.

6. Are "emerging trends" or the "pressures to change" affecting the ability of your company, or the firms that you represent, to utilize students leaving high school with their current level of skills?

_____ Yes _____ No _____ Don't Know

7. Please explain you answer above.

If you have any questions regarding this survey, please contact Patricia L. de Cos at (916) 653-5207 or e-mail us at careersproject@library.ca.gov.

Thank you for your time and input to this survey.

Would you like a copy of the final report? _____ Yes _____ No

Would you be interested in participating in a policy forum in Sacramento to share your thoughts to state policymakers, from the perspective of business/industry, regarding students' preparation for the variety of careers available in the various industries found in California's overall and regional economies? _____ Yes _____ No

BASIC INFORMATION SERVICES – TELECOMMUNICATIONS – WIRELESS TELECOMMUNICATIONS CARRIERS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Wireless Telecommunications Carriers** through 2014.

- Retail salespersons
- Office clerks, general
- Customer service representatives
- First-line supervisors/managers of retail sales workers

- Compliance officers, except agriculture, construction, health and safety, and transportation
- Bookkeeping, accounting, and auditing clerks
- First-line supervisors/managers of office and administrative support workers
- Telecommunications equipment installers and repairers, except line installers
- Sales representatives, wholesale and manufacturing, except technical and scientific products
- Network systems and data communications analysts
- Network and computer systems administrators
- Computer systems analysts
- Computer software engineers, applications
- General and operations managers
- Business operations specialists, all other
- Sales representatives, services, all other
- Human resources, training, and labor relations specialists, all other

1. Do you agree that these will be the largest and fastest growing occupations through 2014? Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

- 1 Never
- 2 Rarely
- 3 Sometimes
- 4 Most of the time
- 5 Always
- 6 Don't Know

6. Are there one or more occupations in your industry for which you, or the businesses in the industry that you represent, hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

BASIC INFORMATION SERVICES – TELECOMMUNICATIONS – RESELLERS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Telecommunications Resellers** through 2014.

- Retail salespersons
- Computer support specialists
- Purchasing agents, except wholesale, retail, and farm products
- Accountants and auditors
- Computer systems analysts
- Computer software engineers, systems software
- General and operations managers
- Computer and information systems managers
- Business operations specialists, all other
- Sales representatives, services, all other

1. Do you agree that these will be the largest and fastest growing occupations? Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:
- a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.
- _____ Yes _____ No _____ Don't Know
- b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.
- _____ Yes _____ No _____ Don't Know
- c. Workers do not have the necessary skills to perform the job? Please check below.
- _____ Yes _____ No _____ Don't Know
- d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.
- _____ Yes _____ No _____ Don't Know
- e. If yes, please explain.
- _____
- _____
3. If you do not agree that these jobs will grow in the future, why not?
- _____
- _____
4. What occupations would you add or omit?
- _____
- _____
5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:
- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
 - **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
 - **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

a. Are there other skills you would add or omit? Please check below.
_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

BASIC INFORMATION SERVICES INDUSTRY – PUBLISHING – NEWSPAPER, BOOK & DIRECTORY PUBLISHERS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Newspaper, Book & Directory Publishers** through 2014.

- Machine feeders and offbearers
- Office clerks, general
- Printing machine operators
- Customer service representatives
- Desktop publishers

- Prepress technicians and workers
- Advertising sales agents
- Graphic designers
- Reporters and correspondents
- Editors
- Management analysts

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** – Managing one’s own time and the time of others.
- **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don’t Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don’t Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don’t Know

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

- a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.
-
-

BASIC INFORMATION SERVICES INDUSTRY – PUBLISHING – SOFTWARE PUBLISHERS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Software Publishers** through 2014.

- Packers and packagers, hand
- Shipping, receiving, and traffic clerks
- Production, planning, and expediting clerks
- Human resources assistants, except payroll and timekeeping
- Executive secretaries and administrative assistants
- Computer support specialists
- Network systems and data communications analysts
- Logisticians
- Multi-media artists and animators
- Computer programmers
- Computer systems analysts
- Sales representatives, wholesale and manufacturing, technical and scientific products
- Financial analysts
- Computer software engineers, applications
- Computer software engineers, systems software
- Computer and information systems managers
- Computer and information scientists, research

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

- a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

MANUFACTURING VALUE CHAIN – LOGISTICS – GENERAL FREIGHT TRUCKING

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **General Freight Trucking** through 2014.

- Laborers and freight, stock, and material movers, hand
- Truck drivers, light or delivery services
- Office clerks, general
- Industrial truck and tractor operators
- Customer service representatives
- Dispatchers, except police, fire, and ambulance
- Truck drivers, heavy and tractor-trailer
- Bookkeeping, accounting, and auditing clerks
- Bus and truck mechanics and diesel engine specialists
- First-line supervisors/managers of transportation and material-moving machine and vehicle operators

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

- a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

- a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

- b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

- c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

- d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

- e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** – Managing one's own time and the time of others.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Speaking** – Talking to others to convey information effectively.*

- D. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

- b. If yes, please specify.

- c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

- a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

MANUFACTURING VALUE CHAIN – LOGISTICS – WAREHOUSING & STORAGE

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Warehousing and Storage** through 2014.

- Packers and packagers, hand
- Stock clerks and order fillers
- Laborers and freight, stock, and material movers, hand
- Receptionists and information clerks
- Data entry keyers
- Truck drivers, light or delivery services
- Shipping, receiving, and traffic clerks
- Industrial truck and tractor operators
- Customer service representatives
- Truck drivers, heavy and tractor-trailer
- Maintenance and repair workers, general
- First-line supervisors/managers of helpers, laborers, and material movers, hand
- First-line supervisors/managers of mechanics, installers, and repairers
- First-line supervisors/managers of non-retail sales workers
- Administrative services managers
- Sales managers
- Installation, maintenance, and repair workers, all other
- Business operations specialists, all other

1. Do you agree that these will be the largest and fastest growing occupations? Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

- a. If yes, which of these occupations do you believe will:
- Provide the most jobs _____
 - Be most critical for growth in the industry _____
 - Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

- a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

- b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

- c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

- d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

- e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** – Managing one's own time and the time of others.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.

- **Speaking** – Talking to others to convey information effectively.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.
 Yes No Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

Yes No Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

Yes No Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

MANUFACTURING VALUE CHAIN – LOGISTICS – SCHEDULED AIR TRANSPORTATION

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Scheduled Air Transportation** through 2014.

- Baggage porters and bellhops
-

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

- Laborers and freight, stock, and material movers, hand
- Reservation and transportation ticket agents and travel clerks
- Customer service representatives
- Cargo and freight agents
- Flight attendants
- First-line supervisors/managers of office and administrative support workers
- Training and development specialists
- First-line supervisors/managers of mechanics, installers, and repairers
- Airline pilots, copilots, and flight engineers
- Transportation workers, all other

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** – Managing one’s own time and the time of others.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Speaking** – Talking to others to convey information effectively.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don’t Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don’t Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

_____ Yes _____ No _____ Don't Know

- a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

MANUFACTURING VALUE CHAIN – LOGISTICS – COURIERS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Couriers** through 2014.

- Couriers and messengers
- Laborers and freight, stock, and material movers, hand
- Truck drivers, light or delivery services
- Shipping, receiving, and traffic clerks
- Industrial truck and tractor operators
- Customer service representatives
- Dispatchers, except police, fire, and ambulance
- Truck drivers, heavy and tractor-trailer
- First-line supervisors/managers of helpers, laborers, and material movers, hand
- First-line supervisors/managers of transportation and material-moving machine and vehicle operators

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

- a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

- a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** – Managing one's own time and the time of others.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Speaking** – Talking to others to convey information effectively.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

MANUFACTURING VALUE CHAIN – PRODUCTION – SAWMILLS & WOOD PRESERVATION

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Sawmills and Wood Preservation** through 2014.

- Helpers-production workers
- Janitors and cleaners, except maids and housekeeping cleaners
- Machine feeders and offbearers
- Woodworking machine setters, operators, and tenders, except sawing
- Team assemblers
- Sawing machine setters, operators, and tenders, wood
- Inspectors, testers, sorters, samplers, and weighers
- Industrial truck and tractor operators
- Millwrights
- Sales representatives, wholesale and manufacturing, except technical and scientific products

1. Do you agree that these will be the largest and fastest growing occupations? Please check below.

_____ Yes _____ No _____ Don't Know

If you answered “No” or “Don’t Know,” please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don’t Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don’t Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don’t Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don’t Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Instructing** – Teaching others how to do something.
- **Equipment Maintenance** – Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
- **Equipment Selection** – Determining the kind of tools and equipment needed to do a job.*

a. Are there other skills you would add or omit? Please check below.
 _____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

MANUFACTURING VALUE CHAIN – PRODUCTION – FRUIT, VEGETABLE & SPECIALTY FOODS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Fruit, Vegetable & Specialty Foods Manufacturing** through 2014.

- Graders and sorters, agricultural products
- Packers and packagers, hand
- Janitors and cleaners, except maids and housekeeping cleaners
- Laborers and freight, stock, and material movers, hand
- Packaging and filling machine operators and tenders
- Food batchmakers
- Industrial truck and tractor operators
- Maintenance and repair workers, general
- First-line supervisors/managers of production and operating workers
- Production workers, all other

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

- a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

- a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

- b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

- c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

- d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

- e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work related documents.
- **Coordination** – Adjusting actions in relation to others' actions.*

- a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

- b. If yes, please specify.

- c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

- a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

MANUFACTURING VALUE CHAIN – PRODUCTION – ANIMAL SLAUGHTERING & PROCESSING

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Animal Slaughtering & Processing** through 2014.

- Packers and packagers, hand
- Helpers--production workers
- Farmworkers, farm and ranch animals
- Slaughterers and meat packers
- Meat, poultry, and fish cutters and trimmers
- Janitors and cleaners, except maids and housekeeping cleaners
- Laborers and freight, stock, and material movers, hand
- Packaging and filling machine operators and tenders
- Butchers and meat cutters
- Truck drivers, heavy and tractor-trailer
- Industrial machinery mechanics
- First-line supervisors/managers of production and operating workers
- Production workers, all other

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

- a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____

- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Time Management** – Managing one's own time and the time of others.

- **Coordination** – Adjusting actions in relation to others' actions.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

MANUFACTURING VALUE CHAIN – PRODUCTION – COMPUTER & PERIPHERAL EQUIPMENT

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Computers & Peripheral Equipment Manufacturing** through 2014.

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

- Electrical and electronic equipment assemblers
- Semiconductor processors
- Computer support specialists
- Electrical and electronic engineering technicians
- Sales representatives, wholesale and manufacturing, technical and scientific products
- Computer software engineers, applications
- Computer software engineers, systems software
- Computer hardware engineers
- Marketing managers
- Engineering managers
- Human resources, training, and labor relations specialists, all other

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Time Management** – Managing one’s own time and the time of others.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Troubleshooting** – Determining causes of operating errors and deciding what to do about it.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don’t Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don’t Know

If yes, what are they?

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

- a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

MANUFACTURING VALUE CHAIN – PRODUCTION – SEMICONDUCTOR & ELECTRONIC COMPONENTS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Semiconductor & Electronic Components** through 2014.

- Team assemblers
- Electrical and electronic equipment assemblers
- Inspectors, testers, sorters, samplers, and weighers
- Customer service representatives
- Semiconductor processors
- Production, planning, and expediting clerks
- Computer support specialists
- First-line supervisors/managers of production and operating workers
- Electrical and electronic engineering technicians
- Purchasing agents, except wholesale, retail, and farm products
- Accountants and auditors
- Network and computer systems administrators
- Computer systems analysts
- Sales representatives, wholesale and manufacturing, technical and scientific products
- Industrial engineers
- Mechanical engineers
- Management analysts
- Electrical engineers
- Computer software engineers, applications
- Electronics engineers, except computer
- Computer software engineers, systems software
- General and operations managers
- Sales managers
- Marketing managers
- Computer and information systems managers
- Engineering managers
- Business operations specialists, all other
- Human resources, training, and labor relations specialists, all other

- Engineers, all other

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Time Management** – Managing one’s own time and the time of others.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.
_____ Yes _____ No _____ Don’t Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don’t Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don’t Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

MANUFACTURING VALUE CHAIN – PRODUCTION – ELECTRONIC INSTRUMENT MANUFACTURING

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Electronic Instrument Manufacturing** through 2014.

- Team assemblers
- Electrical and electronic equipment assemblers
- Executive secretaries and administrative assistants
- Electro-mechanical technicians
- Mechanical engineering technicians
- Electrical and electronic engineering technicians
- Industrial engineering technicians
- Computer systems analysts
- Industrial engineers
- Mechanical engineers
- Materials engineers
- Electrical engineers
- Computer software engineers, applications
- Electronics engineers, except computer
- Computer software engineers, systems software
- Computer hardware engineers
- Aerospace engineers
- Engineering managers
- Assemblers and fabricators, all other
- Engineering technicians, except drafters, all other
- Business operations specialists, all other
- Engineers, all other

1. Do you agree that these will be the largest and fastest growing occupations?

Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

- a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.
 Yes No Don't Know
- b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.
 Yes No Don't Know
- c. Workers do not have the necessary skills to perform the job? Please check below.
 Yes No Don't Know
- d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.
 Yes No Don't Know
- e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Time Management** – Managing one's own time and the time of others.
- **Complex Problem Solving** – Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

a. Are there other skills you would add or omit? Please check below.
_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

MANUFACTURING VALUE CHAIN – PRODUCTION – CUT & SEW APPAREL MANUFACTURING

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Cut & Sew Apparel Manufacturing** through 2014.

- Packers and packagers, hand
- Sewing machine operators
- Cutters and trimmers, hand
- Laborers and freight, stock, and material movers, hand
- Team assemblers
- Cutting and slicing machine setters, operators, and tenders
- Office clerks, general

- Shipping, receiving, and traffic clerks
- Inspectors, testers, sorters, samplers, and weighers
- Billing and posting clerks and machine operators
- First-line supervisors/managers of helpers, laborers, and material movers, hand
- Fabric and apparel patternmakers
- First-line supervisors/managers of production and operating workers
- Fashion designers
- Business operations specialists, all other

1. Do you agree that these will be the largest and fastest growing occupations?

Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Speaking** – Talking to others to convey information effectively.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

MANUFACTURING VALUE CHAIN – PRODUCTION – MOTOR VEHICLE MANUFACTURING

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Motor Vehicle Manufacturing** through 2014.

- Team assemblers
- Office clerks, general
- Welders, cutters, solderers, and brazers
- Painters, transportation equipment
- First-line supervisors/managers of helpers, laborers, and material movers, hand
- Sales representatives, wholesale and manufacturing, except technical and scientific products
- Industrial production managers

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

- a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

- a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

- b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** – Managing one's own time and the time of others.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

MANUFACTURING VALUE CHAIN – DESIGN – ARCHITECTURAL & ENGINEERING SERVICES

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Architectural and Engineering Services** through 2014.

- Landscaping and groundskeeping workers
- Machinists
- Executive secretaries and administrative assistants
- Architectural and civil drafters
- Civil engineering technicians
- Construction and building inspectors
- Surveyors
- Training and development specialists
- Landscape architects
- Budget analysts
- Network and computer systems administrators
- Computer systems analysts
- Civil engineers
- Mechanical engineers
- Electrical engineers
- Computer software engineers, applications
- Electronics engineers, except computer
- Computer software engineers, systems software

- General and operations managers
- Architects, except landscape and naval
- Environmental engineers
- Engineering managers
- Lawyers
- Business operations specialists, all other
- Human resources managers, all other

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** – Managing one’s own time and the time of others.
- **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Complex Problem Solving** – Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don’t Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don’t Know

If yes, what are they?

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

MANUFACTURING VALUE CHAIN – DESIGN – MANAGEMENT & TECHNICAL CONSULTING SERVICES

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Management & Technical Consulting Services** through 2014.

- Landscaping and groundskeeping workers
- Office clerks, general
- Customer service representatives
- Real estate sales agents
- Bookkeeping, accounting, and auditing clerks
- Executive secretaries and administrative assistants
- Heating, air conditioning, and refrigeration mechanics and installers
- Paralegals and legal assistants
- Computer support specialists
- Civil engineering technicians
- Claims adjusters, examiners, and investigators
- Network systems and data communications analysts
- Construction managers
- Employment, recruitment, and placement specialists
- Biological technicians
- Foresters
- Training and development specialists
- Cost estimators
- Accountants and auditors
- Landscape architects
- Urban and regional planners
- Market research analysts
- Network and computer systems administrators
- Technical writers
- Computer systems analysts
- Industrial engineers
- Management analysts

- Financial analysts
- Electrical engineers
- Purchasing managers
- Computer software engineers, applications
- Electronics engineers, except computer
- Computer software engineers, systems software
- Public relations managers
- General and operations managers
- Sales managers
- Marketing managers
- Soil and plant scientists
- Operations research analysts
- Medical scientists, except epidemiologists
- Hydrologists
- Computer and information systems managers
- Engineering managers
- Compliance officers, except agriculture, construction, health and safety, and transportation
- Life, physical, and social science technicians, all other
- Business operations specialists, all other
- Sales representatives, services, all other
- Biological scientists, all other
- Human resources managers, all other
- Engineers, all other
- Managers, all other

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** – Managing one's own time and the time of others.
- **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

HEALTH SCIENCE & SERVICES – GENERAL MEDICAL & SURGICAL HOSPITALS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **General Medical & Surgical Hospitals** through 2014.

- Maids and housekeeping cleaners
- Janitors and cleaners, except maids and housekeeping cleaners
- Taxi drivers and chauffeurs
- Nursing aides, orderlies, and attendants
- Office clerks, general
- Medical secretaries
- Customer service representatives
- Pharmacy technicians
- First-line supervisors/managers of retail sales workers
- Medical assistants
- Interviewers, except eligibility and loan
- Licensed practical and licensed vocational nurses
- Claims adjusters, examiners, and investigators
- Radiologic technologists and technicians

- Respiratory therapists
- Registered nurses
- Medical and clinical laboratory technologists
- Medical and health services managers
- Pharmacists
- Pediatricians, general
- Healthcare support workers, all other
- Business operations specialists, all other
- Physicians and surgeons, all other

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** – Managing one’s own time and the time of others.
- **Speaking** — Talking to others to convey information effectively.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Writing** – Communicating effectively in writing as appropriate for the needs of the audience.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don’t Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don’t Know

If yes, what are they?

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

HEALTH SCIENCE & SERVICES – OFFICES OF PHYSICIANS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Offices of Physicians** through 2014.

- Cashiers
- Receptionists and information clerks
- Office clerks, general
- Medical secretaries
- Billing and posting clerks and machine operators
- Medical assistants
- Medical records and health information technicians
- Computer support specialists
- First-line supervisors/managers of office and administrative support workers
- Claims adjusters, examiners, and investigators
- Radiologic technologists and technicians
- Registered nurses
- Nuclear medicine technologists
- Physician assistants
- Substance abuse and behavioral disorder counselors
- Family and general practitioners
- Human resources, training, and labor relations specialists, all other
- Physicians and surgeons, all other

1. Do you agree that these will be the largest and fastest growing occupations? Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:
- People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.
 Yes No Don't Know
 - There is no information for job seekers to find out about the need for workers in your industry? Please check below.
 Yes No Don't Know
 - Workers do not have the necessary skills to perform the job? Please check below.
 Yes No Don't Know
 - If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.
 Yes No Don't Know
 - If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:
- Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
 - Time Management** – Managing one's own time and the time of others.
 - Speaking** – Talking to others to convey information effectively.
 - Instructing** – Teaching others how to do something.
 - Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
 - Writing** – Communicating effectively in writing as appropriate for the needs of the audience.

- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

HEALTH SCIENCE & SERVICES – SCIENTIFIC RESEARCH & DEVELOPMENT

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Scientific Research and Development Services** through 2014.

- Executive secretaries and administrative assistants
- Biological technicians
- Computer software engineers, systems software

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

- General and operations managers
- Computer software engineers, applications
- Chemists
- Electronics engineers, except computer
- Biomedical engineers
- Materials engineers
- First-line supervisors/managers of mechanics, installers, and repairers
- Public relations managers
- Health and safety engineers, except mining safety engineers and inspectors
- Food scientists and technologists
- Medical scientists, except epidemiologists
- Aerospace engineers
- Engineering managers
- Natural sciences managers
- Biochemists and biophysicists
- Engineers, all other
- Business operations specialists, all other

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Time Management** – Managing one's own time and the time of others.
- **Active Learning** – Understanding the implications of new information for both current and future problem solving and decision making.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

RETAIL TRADE INDUSTRY – GROCERY STORES

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Grocery Stores** through 2014.

- Combined food preparation and serving workers, including fast food
- Packers and packagers, hand
- Food preparation workers
- Cashiers
- Meat, poultry, and fish cutters and trimmers
- Stock clerks and order fillers
- Butchers and meat cutters
- Bakers
- Pharmacy technicians
- First-line supervisors/managers of retail sales workers
- General and operations managers
- Pharmacists

1. Do you agree that these will be the largest and fastest growing occupations? Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

- a. If yes, which of these occupations do you believe will:
- Provide the most jobs _____
 - Be most critical for growth in the industry _____
 - Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

- a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

- b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

- c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

- d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

- e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work related documents.

- **Speaking** – Talking to others to convey information effectively.
- **Instructing** – Teaching others how to do something.*

a. Are there other skills you would add or omit? Please check below.
 _____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

RETAIL TRADE INDUSTRY – BUILDING MATERIAL & SUPPLIES DEALERS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Building Material & Supplies Dealers** through 2014.

- Cashiers

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

- Janitors and cleaners, except maids and housekeeping cleaners
- Stock clerks and order fillers
- Laborers and freight, stock, and material movers, hand
- Retail salespersons
- Truck drivers, light or delivery services
- Shipping, receiving, and traffic clerks
- Industrial truck and tractor operators
- Dispatchers, except police, fire, and ambulance
- Truck drivers, heavy and tractor-trailer
- First-line supervisors/managers of retail sales workers
- Glaziers
- Carpenters
- Bus and truck mechanics and diesel engine specialists
- Heating, air conditioning, and refrigeration mechanics and installers
- Training and development specialists
- General and operations managers

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Speaking** – Talking to others to convey information effectively.
- **Time Management** – Managing one's own time and the time of others.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

- a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

RETAIL TRADE INDUSTRY – DEPARTMENT STORES

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Department Stores** through 2014.

- Combined food preparation and serving workers, including fast food
- Cashiers
- Stock clerks and order fillers
- Laborers and freight, stock, and material movers, hand
- Security guards
- Retail salespersons
- Shipping, receiving, and traffic clerks
- Customer service representatives
- First-line supervisors/managers of retail sales workers
- First-line supervisors/managers of office and administrative support workers

1. Do you agree that these will be the largest and fastest growing occupations? Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

- a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____

- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Speaking** – Talking to others to convey information effectively.
- **Social Perceptiveness** – Being aware of others' reactions and understanding why they react as they do.

- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Instructing** – Teaching others how to do something.*

a. Are there other skills you would add or omit? Please check below.
 Yes No Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being “Never” and 5 being “Always,” do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

Yes No Don't Know

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

Yes No Don't Know

a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

RETAIL TRADE INDUSTRY – AUTOMOBILE DEALERS

Verify Government Collected Data

Recently analyzed data provided by the California Employment Development Department and U.S. Department of Labor suggest that the following occupations are projected to be the largest and fastest growing for **Automobile Dealers** through 2014.

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

- Cleaners of vehicles and equipment
- Cashiers
- Landscaping and groundskeeping workers
- Counter and rental clerks
- Retail salespersons
- Office clerks, general
- Parts salespersons
- First-line supervisors/managers of retail sales workers
- Electronic equipment installers and repairers, motor vehicles
- Bookkeeping, accounting, and auditing clerks
- Human resources assistants, except payroll and timekeeping
- Automotive service technicians and mechanics
- Compensation and benefits managers
- Sales managers

1. Do you agree that these will be the largest and fastest growing occupations?
Please check below.

_____ Yes _____ No _____ Don't Know

If you answered "No" or "Don't Know," please skip to Question 3.

a. If yes, which of these occupations do you believe will:

- Provide the most jobs _____
- Be most critical for growth in the industry _____
- Experience the greatest labor shortages _____

2. With respect to occupations that may experience shortages, do you believe it is because:

a. People are leaving the workforce and we cannot keep pace with the replacement needs? Please check below.

_____ Yes _____ No _____ Don't Know

b. There is no information for job seekers to find out about the need for workers in your industry? Please check below.

_____ Yes _____ No _____ Don't Know

c. Workers do not have the necessary skills to perform the job? Please check below.

_____ Yes _____ No _____ Don't Know

d. If you answered yes to any of the three questions, is there anything being done to respond to the shortages? Please check below.

_____ Yes _____ No _____ Don't Know

e. If yes, please explain.

3. If you do not agree that these jobs will grow in the future, why not?

4. What occupations would you add or omit?

5. Government data suggest that for the fastest and largest growing jobs in your industry through 2014, the top third most common job skills that will be needed include:

- **Active Listening** – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Reading Comprehension** – Understanding written sentences and paragraphs in work-related documents.
- **Social Perceptiveness** – Being aware of others' reactions and understanding why they react as they do.
- **Speaking** – Talking to others to convey information effectively.
- **Critical Thinking** – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.*

a. Are there other skills you would add or omit? Please check below.

_____ Yes _____ No _____ Don't Know

b. If yes, please specify.

c. On a scale from 1 to 5, with 1 being "Never" and 5 being "Always," do you think entry-level workers have the skills needed to perform their jobs?

1 2 3 4 5

6. Are there one or more occupations in your industry for which you hire or at least intern high school students? Please check below.

_____ Yes _____ No _____ Don't Know

* The skills and their definitions were provided by O*Net for the U.S. Department of Labor.

If yes, what are they?

7. Are there one or more ways for high school students or entry-level workers to enter and advance their way into your industry? Please check below.

_____ Yes _____ No _____ Don't Know

- a. If yes, please describe one (or more) common way high school students or entry-level workers can enter your industry.

Appendix 5: List of Reviewers

Members of the Legislative Advisory Committee and other interested stakeholders and organizations reviewed the draft employer survey and the list of potential organizations to contact. These included:

Legislative Advisory Group (Briefing on January 10, 2008)

- Rebecca Wood, former Assemblymember Greg Aghazarian's Office*
- Ken DeVore, Senator Roy Ashburn's Office*
- Rebecca Baumann, Senator Loni Hancock's Office*
- Shandon Griffin, former Assemblymember Guy Houston's Office*
- Marisol Aviña, Assembly Education Committee, former Assemblymember Gene Mullin*
- Chris Alvarez, Assemblymember Lori Saldaña's Office*
- Beth Graybill, Senate Education Committee, former Senator Jack Scott*
- Tanya Wolters, Senator Mark Wyland's Office*
- Erin Gabel, Assemblymember Tom Torlakson's Office*
- Leigh Carter, former Assemblymember Alan Nakanishi's Office
- Susanna Cooper, Senator Darrell Steinberg's Office
- Toni Symonds, Chief Consultant, Jobs, Economic Development & the Economy, Assemblymember Juan Arambula

General Review

- Michael Dimmitt, Health Consultant, California Research Bureau
- Virginia Hamilton, Executive Director, California Workforce Association
- Ed Kawahara, Ph.D., Principal Consultant, and Janet Maglente, Research Specialist Economic Strategy Panel, California Labor and Workforce Development Agency
- Barbara Halsey, Executive Director, California Workforce Investment Board
- Frances M. Laskey, President, California Employer Advisory Council
- Trish Kelly, Program Consultant, California Center for Regional Leadership
- Fred Jones, Law Offices of Fred Jones
- Gus Koehler, Ph.D., CEO, Time Structures
- Wayne Schell, President & CEO, California Association for Local Economic Development
- Loren Kaye, President, California Foundation for Commerce and Education
- Doug Brown, Retired Consultant, Senate Business, Professions & Economic Development Committee
- Roger Dunstan, Consultant, Senate Health Committee

* Legislative members who originally requested the California Research Bureau's study.

- Fran Kennedy, former Director of Industry Initiatives, California Labor and Workforce Development Agency
- Paul Gussman, Retired Administrator, California Department of Education
- Svetlana Darche, Director, Career Education, WestEd
- Rona Sherriff, retired from the Senate Office of Research
- LeeAngela Reid, Senate Office of Research
- Peter Cooper, Senior Project Manager, Workforce & Economic Development Program, California Labor Federation AFL-CIO

The employer surveys were pilot-tested with the following individuals:

- Scott Hauge, President, Small Business California
- Stedman Ruiz, Society for Human Resource Management
- Betty Jo Toccoli, President, California Small Business Association
- Gino DiCaro, Vice President, California Manufacturers & Technology Association
- Randall D. Martinez, Executive Vice President & Chief Operating Officer, Cordoba Corporation
- Maria Elena Kennedy, Kennedy Communications
- Namoch Sokhom, Director, Business Development Center, Pacific Asian Consortium in Employment
- Sergio Gascón, Executive Director, L.A. Minority Business Enterprise Center, University of Southern California
- John Neal, CPA, Managing Principal, Paulin-Neal
- Martha Montoya, Chair, Southern Region, California Hispanic Chambers of Commerce