



SECTOR RESEARCH BRIEF | WORKFORCE NEEDS OF SMALL BUSINESSES IN ADVANCED MANUFACTURING

San Diego County

November 2015

Introduction

This research brief is one of the companion documents to *Workforce Needs of Small Businesses in San Diego*, a comprehensive labor market report developed and published in partnership between the San Diego and Imperial Counties (SDIC) Regional Consortium of Community Colleges representing the San Diego and Imperial Counties Community Colleges Association (SDICCCA), the Regional Center of Excellence for Labor Market Research (COE) and the San Diego Workforce Partnership (SDWP).¹ The comprehensive study examines the workforce needs of small businesses across San Diego County in general and specifically in priority and emergent sectors including Advanced Manufacturing, Health Care, Advanced Transportation, Life Sciences/Biotechnology (Biotech) and Information and Communication Technologies (ICT). The study combines secondary data analyses and the findings from the survey of 347 small businesses across the sectors in San Diego region.

This research brief summarizes survey findings for small businesses that operate within the Advanced Manufacturing sector. It presents information about current and projected employment for these businesses, skills and education requirements, training preferences and other workforce related topics.

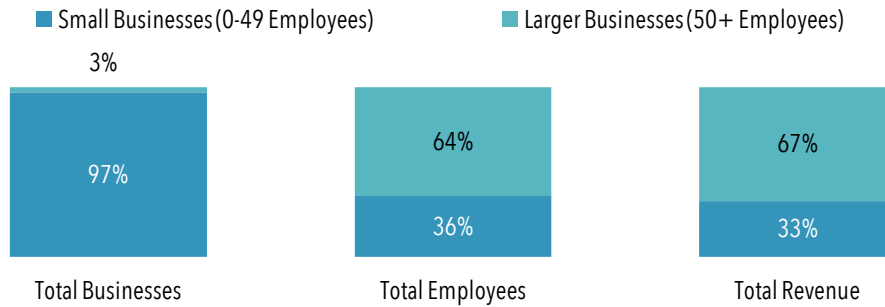
Impact of Small Businesses

There are estimated 7,600 small businesses operating in the Advanced Manufacturing sector in the San Diego area, which is about 8 percent of all small businesses. These businesses play a key role in Advanced Manufacturing, accounting for significant portions of businesses, employees and annual revenue.² As figure 1 demonstrates, 97 percent of all Advanced Manufacturing businesses are businesses with fewer than 50 employees. Small businesses in this sector also account for 36% of all employees and for a third of all generated annual revenue.

¹ Full study report and other sector-specific research briefs can be accessed at workforce.org/reports.

² This is the COE estimate based on the analysis of NAICS codes, business database from Infogroup, and survey incidence rates.

Figure 1. Small Businesses in Advanced Manufacturing, by Business County, Employment and Revenue

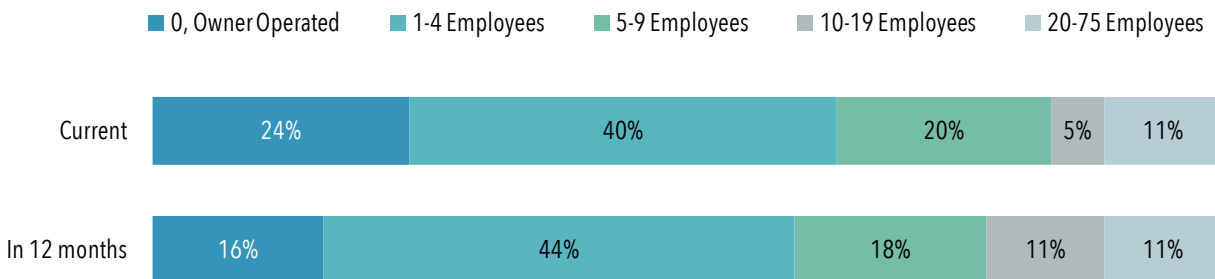


Current and Projected Employment

Of the 347 small businesses who participated in the survey, 45 were identified to be part of the Advanced Manufacturing sector based on their industry code.

Average employment for small businesses in Advanced Manufacturing was seven workers per firm. Within the next 12 months, the average number of employees is expected to grow to nine. Employment growth is expected in the 1 to 4 and 10 to 19 employment size categories (Figure 2).

Figure 2. Advanced Manufacturing Businesses by Employment Size



In 2015, Advanced Manufacturing small businesses (including owner-operated firms) are estimated to employ approximately 45,500 workers. By 2016, total employment in these small businesses is expected to grow by 15 percent, or 7,000 new positions (Table 1).

Table 1. Estimated Employment Projections for Advanced Manufacturing Small Businesses in San Diego in 2016

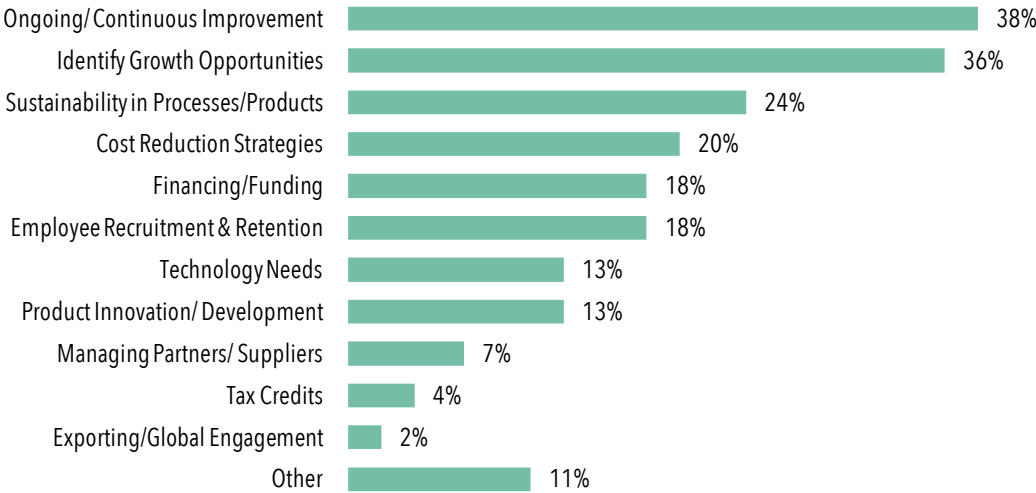
Size of Business	Current Employment	Employment in 12 Months	Change	% Change
0-4 Employees	8,500	11,100	2,700	31%
5-9 Employees	6,700	7,700	1,000	16%
10-19 Employees	9,900	11,000	1,200	12%
20-75 Employees	20,400	22,500	2,100	10%
Total	45,500	52,300	7,000	15%

As Table 1 shows, small businesses in Advanced Manufacturing with only 0-4 employees (with “0” indicating owner-operated establishments) are expected to grow at the fastest rate (31 percent), adding approximately 2,700 jobs in the next 12 months in San Diego region. The initial small employment size attributes to this fast growth. For example, businesses with only one employee expecting to hire four new positions would see a 400 percent increase. The same four-person increase would be only 20 percent for a business with 20 employees.³ Small businesses with 5-9 employees have a current employment of 6,700 and are projected to grow at a rate of 16 percent into 2016.

Challenges for Small Business

The Advanced Manufacturing small businesses anticipate that their top challenges over the next one to two years will include ongoing/continuous improvement (38 percent of firms reported this as one of their three challenges), identification of growth opportunities (36 percent) and sustainability (24 percent). While continuous improvement and identification of growth opportunities are the top concerns for small businesses across all sectors, sustainability in processes or products is a unique concern specifically for advanced manufacturing small businesses (Figure 3).⁴

Figure 3. Top Challenges of Small Businesses in Advanced Manufacturing (n=45)



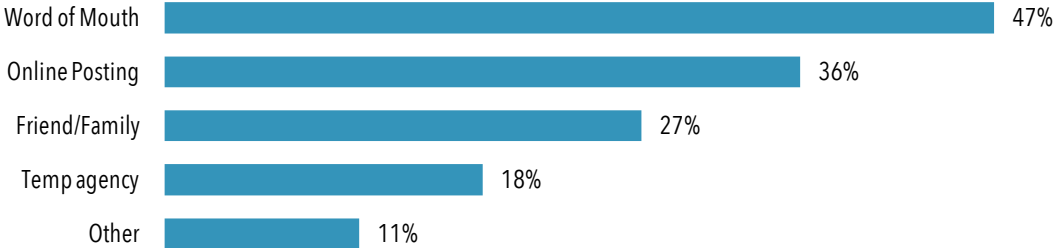
³ The complete methodology for how these estimates were obtained is available in Appendix A of *Workforce Needs of Small Businesses in San Diego* report.

⁴ Percentages will not add to 100 due to businesses selecting more than one option

Hiring Practices and Difficulties

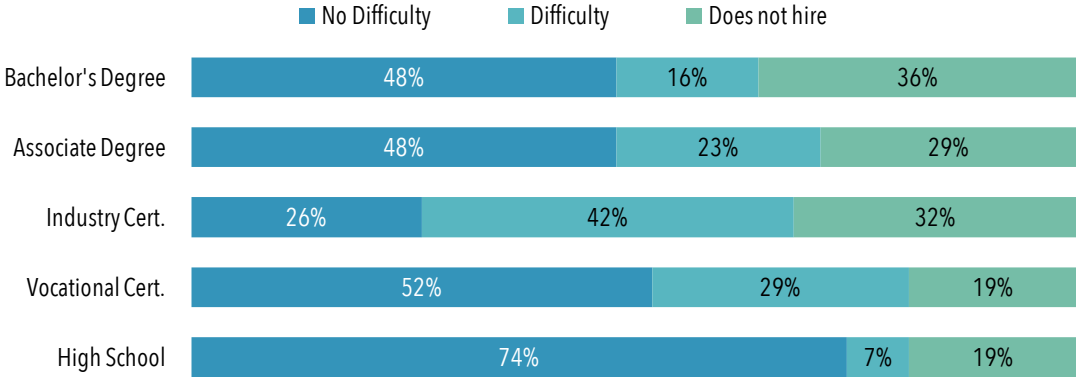
The most commonly-used method of recruiting used by Advanced Manufacturing businesses was word-of-mouth or networking (47 percent) followed by online job postings (36 percent). The least commonly-used method was temporary (placement) agencies. These are the same recruiting methods as small businesses across all sectors utilize. Employers who selected “other” tended to use print media such as classified ads in newspapers and other local publications (Figure 4).

Figure 4. Methods of Seeking Qualified Job Applicants (n=45)



Overall, most small businesses in the Advanced Manufacturing sector did not face difficulty when hiring individuals with a high school education and faced the most difficulty hiring those with an industry certificate, with 42 percent of small businesses reporting such difficulty (Figure 5).

Figure 5. Hiring Difficulty by Education Level (n=31)



Thirty-two percent of the Advanced Manufacturing employers had hired applicants with a degree or certificate from one of the California Community Colleges.

Opportunities and Resources for Small Businesses

Respondents were asked about the various resources that are available to small businesses and whether or not they access these resources. The majority of the small businesses in Advanced Manufacturing are unaware of the various resources available, with 30 of the small businesses surveyed not utilizing any of the resources listed (table 2). The most commonly accessed resources were the U.S Small Business

Administration, Chambers of Commerce and the Small Business Development Council (SBDC), but only a few firms selected each.

Table 2. Number of Small Businesses Utilizing Available Resources

Resource	Number of Businesses
U.S. Small Business Administration	4
Chambers of Commerce	3
Small Business Development Council (SBDC)	3
Better Business Bureau	3
Industry Incubators	1
San Diego Workforce Partnership or America's Job Center of California (AJCC)	0
San Diego Center for International Trade	0
ACCION	0
Asian Business Association	0
Economic Development Council/Corporations (EDC)	0
Governors' Office of Business	0
None	30

Workforce Needs of Small Business

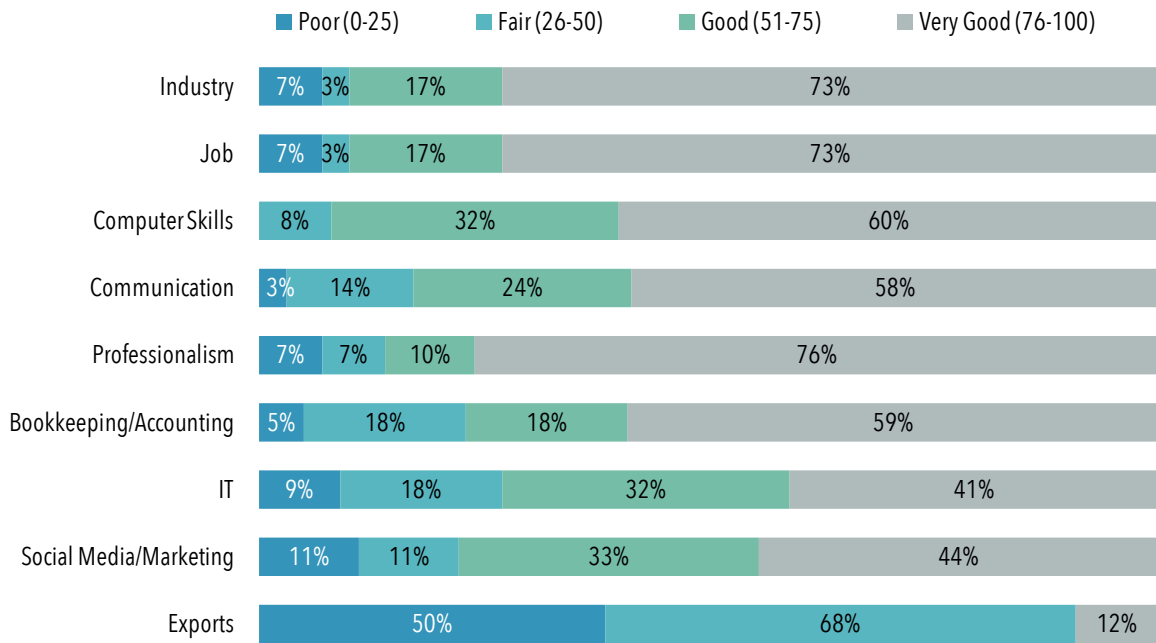
Advanced Manufacturing small businesses place the highest value on previous work experience and soft skills in the applicants they hire. This is based on the responses from employers who ranked the following attributes of job candidates in order of importance: previous work experience, soft skills (e.g., written and oral communication), technical skills and post-secondary education (Table 3).

Table 3. Top Skills for New Hires (n=31)

Rank	Skill
1	Previous Work Experience
2	Soft Skills
3	Technical Skills
4	Post-Secondary Education

Small business employers in Advanced Manufacturing also ranked the proficiency of their employees in various skills. The skills were ranked from 0 to 100 (lowest to highest) where 0 to 25 is poor, 26 to 50 is fair, 51 to 75 is good and 76 to 100 is very good. Advanced Manufacturing small businesses felt their employees were proficient in their job and in the industry in general. The area they felt they could use improvement was exports, followed by IT and social media/marketing. Because small businesses have so few employees, it is important for the workers to possess knowledge and skills across multiple roles to help contribute to the business while keeping costs down (Figure 6).

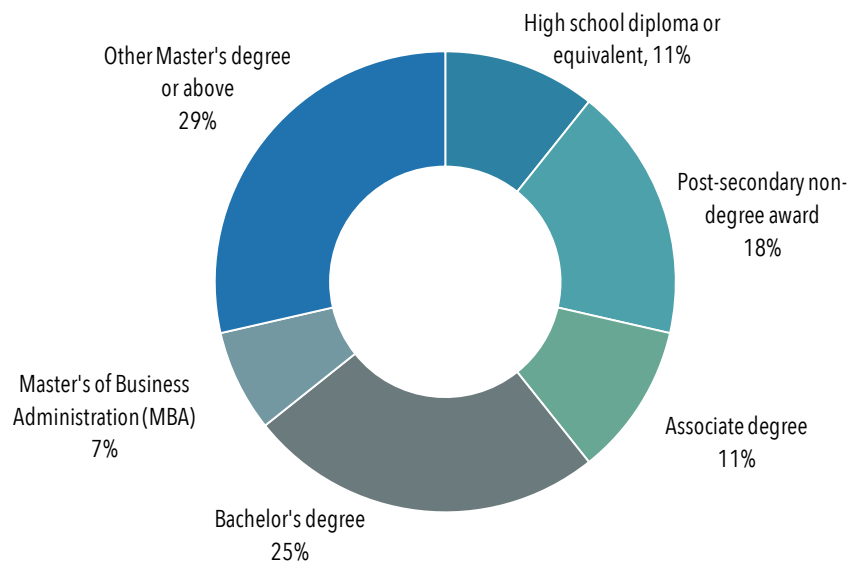
Figure 6. Average Scores of Employees' Skills (n=30)



Business Owner Education & Skills

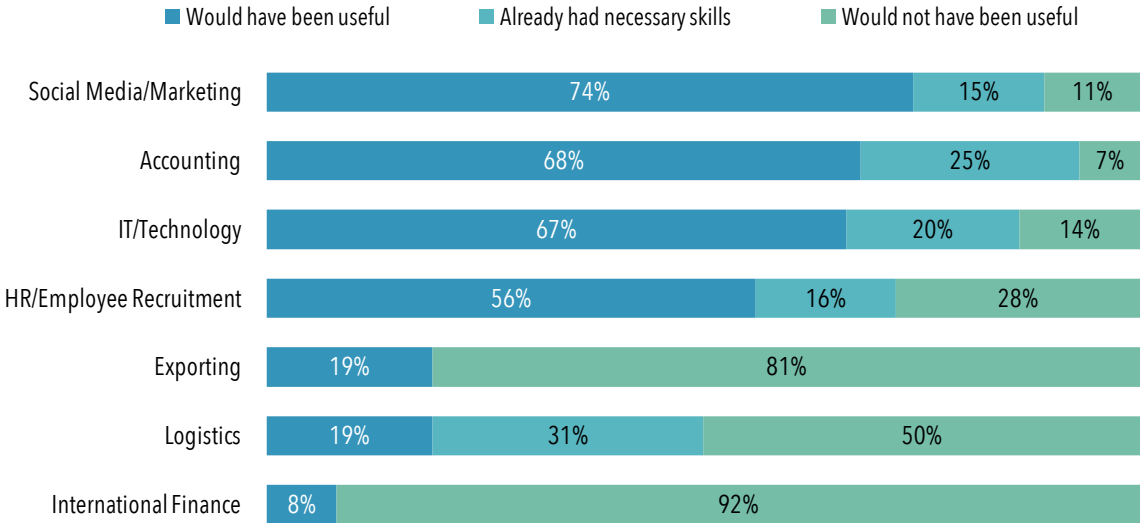
Among the small business owners in Advanced Manufacturing, the majority were highly educated, with 61 percent holding at least a Bachelor's degree (Figure 7).

Figure 7. Educational Attainment of Advanced Manufacturing Business Owners (n=28)



Advanced Manufacturing small business owners find that HR/employee recruitment, accounting and IT/technology are the most useful knowledge areas and skills for starting a business. Accounting was also a knowledge area that most business owners already possessed (Figure 8). As for small businesses across all sectors, small businesses in advanced manufacturing require workers, including the owner, to have strong competencies across all fields to keep the business running.

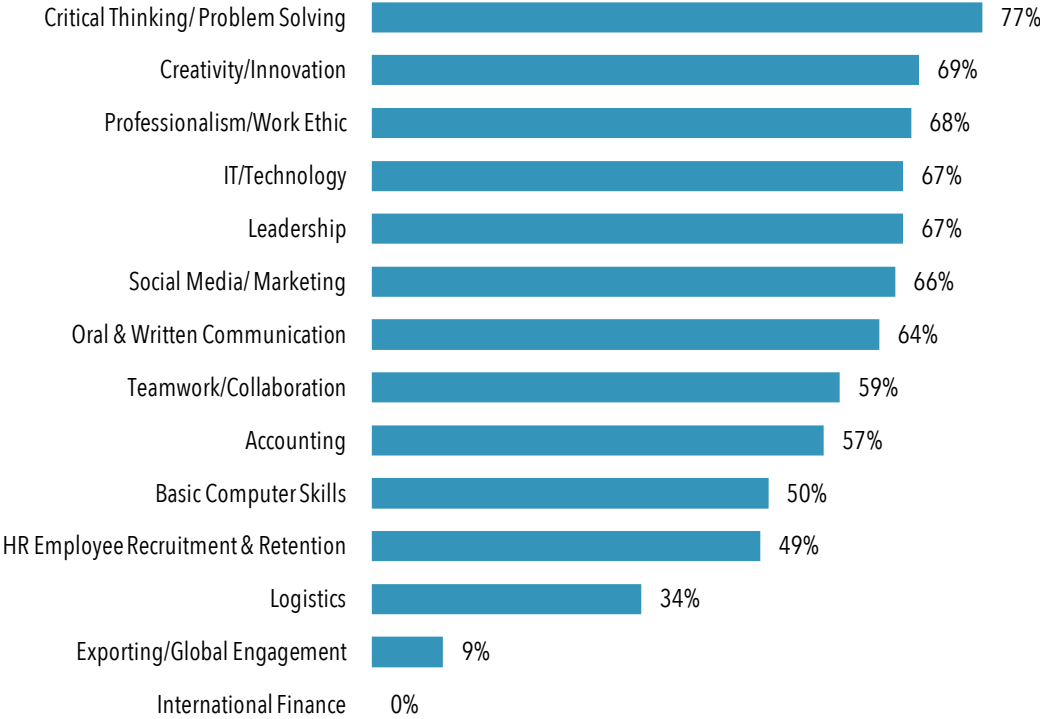
Figure 8. Usefulness of Skills When Starting a Business (n=28)



Training Needs

The top training topics of interest for Advanced Manufacturing small businesses are critical thinking/problem solving, creativity/innovation, professionalism/work ethics, IT/technology, and leadership. While critical thinking, leadership and marketing are considered the most useful topics for future training among all small businesses, creativity/innovation and work ethics were rated higher by small businesses in Advanced Manufacturing (Figure 9).

Figure 9. Useful Workshops for Advanced Manufacturing Small Business (n=28)



Since small businesses operating in Advanced Manufacturing industries generally show similar patterns in workforce and education/training needs, the same conclusions and recommendations as provided in the main report apply.⁵

⁵ The Conclusion and Recommendations section can be found on pages 20-22 of the Workforce Needs of Small Businesses in San Diego report (workforce.org/reports).