
Closing the Future Skills Gap in the Workforce at Manufacturing Companies

With new skills required in the manufacturing industry, companies can use job redesign and talent assessments to build a comprehensive upskill and reskill program. We explain how we helped one of our manufacturing clients do this effectively.

The business outlook for the manufacturing industry and broader economy in Singapore is positive. Last year, GDP grew 7.3 percent — the highest since 2010. Manufacturing was the star performer with 13.2 percent growth. While 2022 may face some headwinds with supply chain disruptions and talent shortages, the overall outlook remains optimistic. Economists forecast 4-5 percent growth in the manufacturing industry for 2022.

Despite positive business indicators, HR and business leaders at manufacturing companies are challenged to attract talent with the necessary skills for jobs that are rapidly changing. Many people have outdated impressions of working in manufacturing, such as cramped and unsafe working conditions or menial tasks. The reality is often quite different. Technology continues to shape work and automate many undesirable tasks, and workers increasingly need digital expertise to operate equipment.

“The manufacturing industry needs a local workforce with the required skill set to operate the technologies that are presently in use and is also willing to advance or contribute towards the transformation of the manufacturing sector,” said Douglas Foo, president of Singapore Manufacturing Association to the Straits Times last year.

Foo pointed out that while Singapore ranked first for developing new technologies in the World’s Digital Competitiveness Ranking 2020, it ranks 12th in “digital readiness” or adaptability to technological changes and business agility.

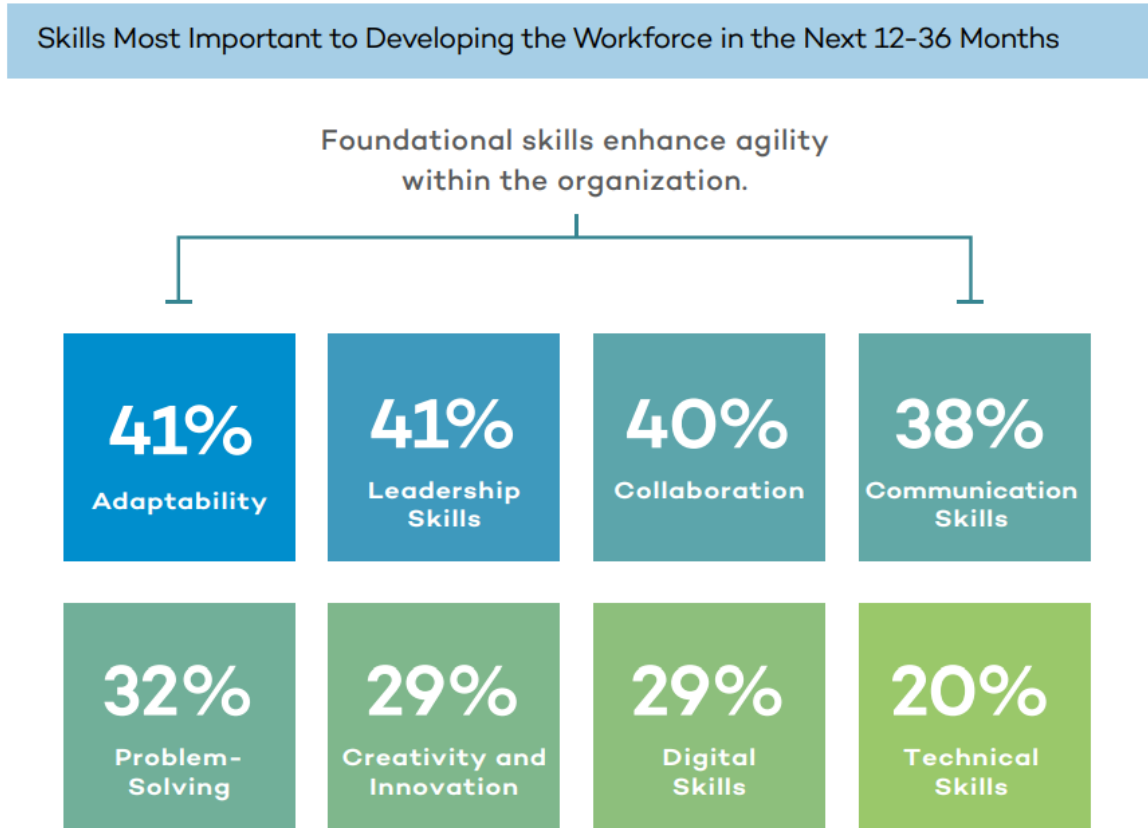
Focus on foundational skills first

A recent study in the United States by the Manufacturers Alliance Foundation and Aon concluded that although the skills gap tends to focus on digital skills, having foundational skills among your workforce is critical to staying competitive amid the rapid pace of business transformation. While digital and technical skills can be developed through training and reskilling programs, softer skills around adaptability and collaboration are more challenging to instill among individuals.

To solve for this, companies should conduct talent assessments to determine baseline capabilities of their workforce and then use holistic strategies to target gaps and develop skills across the employee lifecycle.

The soft skills in Figure 1 are identified as foundational. These underpin the success of any job redesign effort.

Figure 1 – Foundational Soft Skills Needed in Manufacturing



Source: The Manufacturers Alliance and Aon survey of 398 human resources and function leaders in manufacturing, July 2021

Applying foundational skills to a reskilling and upskilling campaign

Successful maintenance technicians, one of the key job roles in manufacturing, need to have a sought-after combination of knowledge, skills and abilities (KSAs). This includes a wide range of trade-related skills and knowledge, as well as a depth of experience to troubleshoot problems and complete regular maintenance and repairs. They also need a clear focus on safety and the ability to work effectively across the organization with different parts of the business. With the emergence of smart factories and embedded software, maintenance technicians need to work with people beyond traditional safety and facility workers to include teams of design engineers and data analysts.

Studies show fewer younger people are choosing trades as a career path. Meanwhile, a substantial portion of the skilled maintenance workforce is nearing retirement. These trends are creating a critical shortage of qualified technicians. Companies need to work to attract new pools of talent, but one underutilized approach is reskilling and upskilling existing workers to apply for new roles (reskilling) or meet changing requirements in their current roles (upskilling).

We recently helped a manufacturing client transform their existing workforce by measuring the KSAs prevalent among their workforce and creating a plan to upskill and reskill employees that had skills gaps but an aptitude for change.

The project

The best individuals for this client's maintenance roles are those who possess both technical and non-technical knowledge and skills, as well as demonstrate the behaviors needed in the abilities area of KSAs to work across the facility.

We helped the client conduct a job analysis to identify the most important technical and non-technical KSAs. Based on the results of the job analysis we designed a five-step assessment process to help identify the most qualified employees for reskilling and upskilling.

The first step is an online assessment of basic non-technical skills, including quality, safety orientation and mechanical comprehension. Candidates who meet the qualification standard progress to a trade-specific technical knowledge test. In the third step, remaining candidates complete a structured behavioral interview assessing the essential, more complex non-technical skills. Next, remaining candidates complete a structured interview assessing their work experience related to the required technical expertise. Finally, candidates complete a series of exercises associated with the specific trade they are applying for.

Testing out the process

To confirm that the assessments helped identify the best candidates, we asked current employees to complete the assessments and had their managers rate their job performance. We then examined the relationships between assessment scores and performance ratings, and confirmed that test scores predicted job performance, and that those who scored higher on the assessments were much more likely to be top performers on the job.

The assessments can predict the following:

- Job effectiveness. High scorers on the assessments are 90 percent more likely to be rated high in overall job effectiveness by their managers than low scorers.
- The best performers. High scorers are 83 percent more likely to be in the top 40 percent of performers.
- Those with a concern for safety. High scorers are 78 percent more likely to be rated high in safety orientation.
- Those the company would choose to re-hire. A good indicator of having hired the right people is whether you would re-hire them. In this study, high assessment scorers are 96 percent more likely to be rated as a re-hire.

A Final Word

This project demonstrates how a well-defined and well-designed job redesign and assessment process can identify the strongest candidates.

This five-step assessment process allowed our client to efficiently identify those with the technical and non-technical skills who will be effective on the job. The process for identifying internal candidates for upskilling and reskilling would put greater emphasis on assessing potential as technical training would be provided for selected candidates. The project highlights a way for manufacturing companies to assess their current workforce and better close the future skills gap internally rather than focusing only on attracting new talent.

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