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2025 Engineering Best Practices

PMMI Business Intelligence

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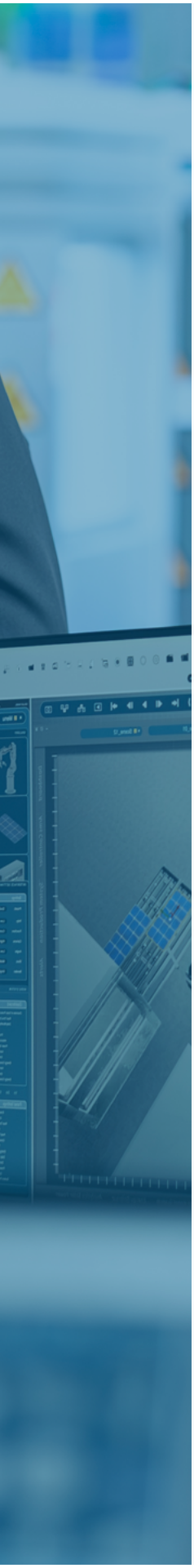

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INTRODUCTION

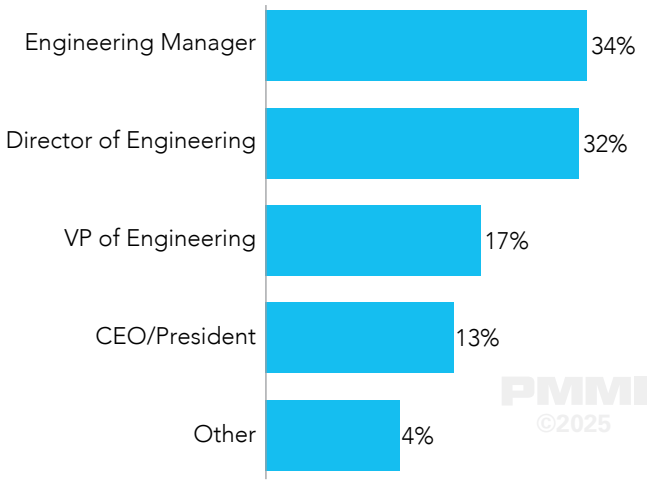
PMMI Business Intelligence publishes annual Best Practices Reports to deliver data-driven insights into industry trends and operational performance. The 2025 edition, an update to the 2022 Engineering Best Practices Report, draws on interviews and surveys with PMMI members to examine the evolving challenges facing engineering departments in the packaging and processing equipment manufacturing sector. This study explores how these teams are adapting to changing demands, highlighting both organizational pressures and emerging strategies.

The findings reveal that engineers are increasingly expected to fulfill diverse, cross-functional roles that combine technical expertise with administrative, customer-facing, and leadership responsibilities. While this evolution enhances the strategic influence of engineering teams, it also heightens workforce strain amid an aging labor pool, growing demand for customized solutions, and rapid digital transformation. This report analyzes these dynamics and identifies effective practices being implemented across the industry to improve knowledge transfer, strengthen workforce retention, and advance digital readiness.

DEPARTMENT STRUCTURES & UTILIZATION

Our survey found that in two-thirds (66%) of packaging and processing equipment manufacturers, primary responsibility for the oversight of all aspects of engineering sits with engineering managers or directors of engineering. The 'other' category in the graph below includes VP of Sales, Managing Director and Director of Operations.

Who has primary responsibility for overseeing all engineering functions?



Engineering managers (34%) and directors of engineering (32%) are most often responsible for overseeing engineering functions in packaging and processing companies

Mechanical engineers make up the largest group within engineering departments, averaging 6 per department, followed by control/automation engineers and application engineers, averaging three each. However, teams vary widely in size. The mean numbers of mechanical, control/automation, and applications engineers among the largest companies surveyed (over $250 Million) were 17, 12 and 8. Among the smallest companies, with annual sales volumes of $0-$10M, the average numbers of mechanical, control/automation, and applications engineers stand at 2, 1 and 1. The largest group of companies represented – those with sales of $20-50M - had an average of 5 mechanical, 3 controls/automation and 3 applications engineers.

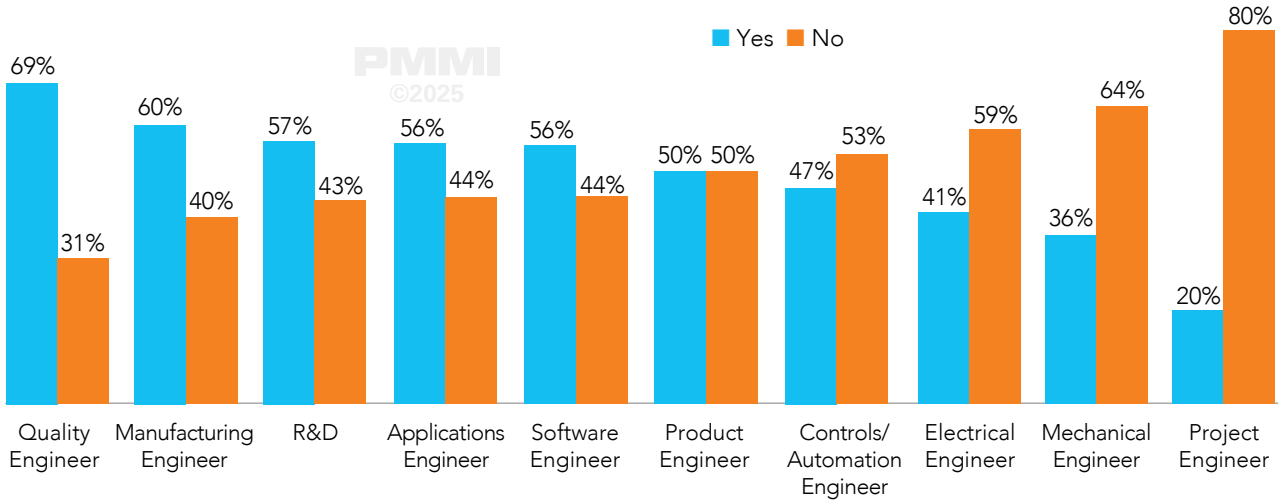
How many full-time engineers do you have in each of the following areas?

Field	Maximum # of engineers on a given team	Average number of engineers
Mechanical Engineer	**80**	**6**
Applications Engineer	**25**	**3**
Controls/Automation Engineer	**60**	**3**
Project Engineer	40	2
Electrical Engineer	30	2
Product Engineer	25	1
Manufacturing Engineer	10	1
Quality Engineer	10	1
Software Engineer	10	1
R&D	20	1

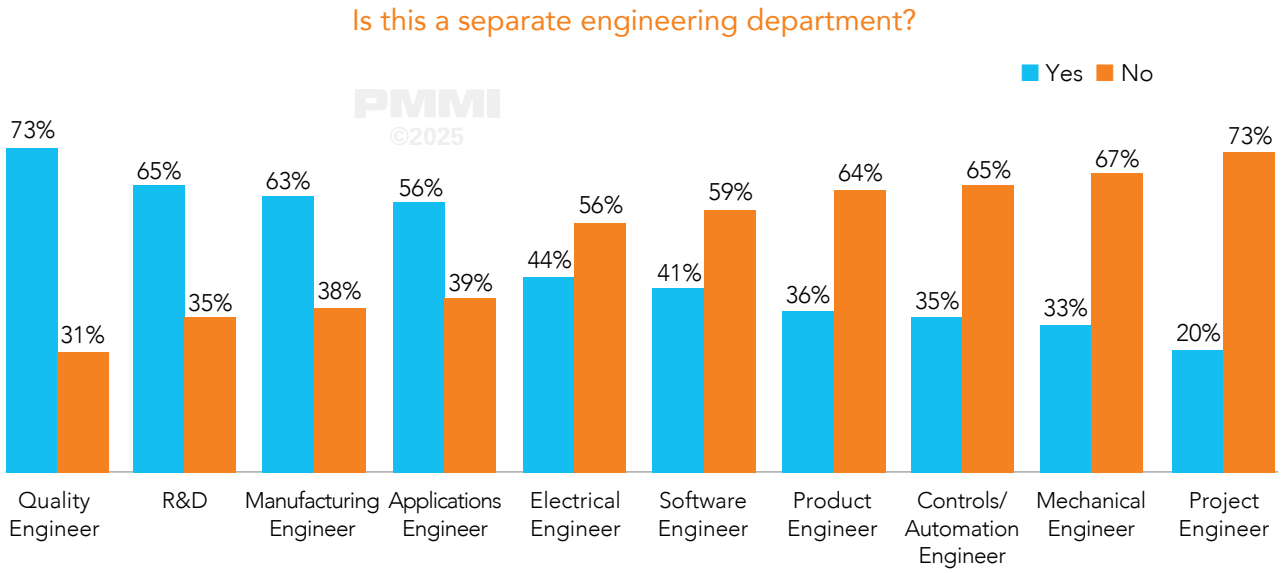
Additionally, there was an "Other" category not shown in this chart, which includes mechanical designers, installation engineers, CAD detailers, engineering technicians (CAD), managers, draft detailers, controls designers and servicers, and one company where there are no full-time engineers. Instead, engineering functions are shared between the owner and three designers.

In cases where work is split into different categories of engineering, respondents were asked if their company has a separate manager for each type of engineering. We found that quality engineering had the highest proportion of dedicated managers, while project engineering was lowest.

Do they have a separate engineering manager?

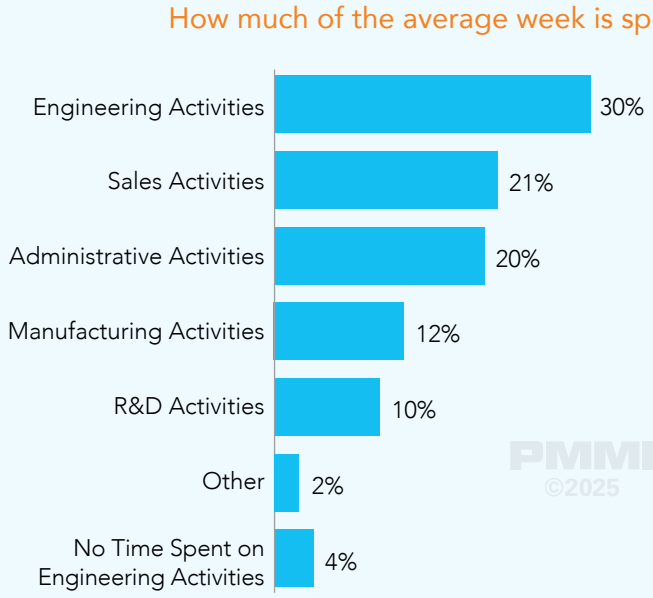


In terms of separate engineering departments, quality engineering again came out top, followed by R&D, manufacturing and applications engineering. Most other engineering categories do not typically operate within their own independent departments.



Engineers' responsibilities often extend beyond traditional technical tasks, encompassing activities such as documentation, participation in sales calls, and contributions to R&D. To better understand how this range of duties affects their workload, participants were asked to estimate the percentage of time spent on various activities during a typical work week.

The graph below illustrates how respondents allocate their 40-hour work week, revealing that approximately 30% of their time is devoted to engineering activities.



The 'Other' category includes support for other departments and project management. It is interesting to note that 3.8% stated there is no time spent on engineering activities.

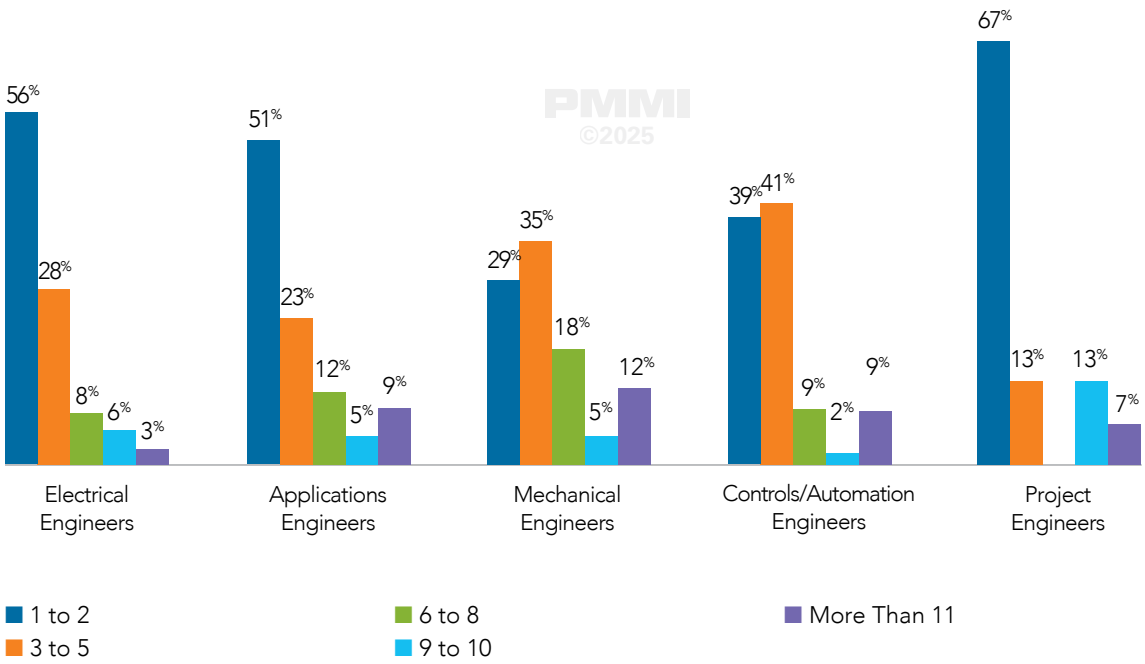
Increasing utilization of engineers on engineering responsibilities can enhance satisfaction

It was evident from the in-depth interviews that a major challenge for PMMI members is keeping engineers focused on engineering tasks. Many engineers' responsibilities appear to be diluted by spending time on tasks such as data entry and sales meetings. However, increasing the time engineers spend on engineering tasks can improve job satisfaction and retention.

> With the salaries getting more competitive, it's hard to grow the team because it starts to get too expensive to have that many engineers. So, what we're working on is how we can get the most engineering out of the engineers. That's what they like to do. They like to engineer; they don't like to do data entry. It actually makes their job more enjoyable and helps with retention.
>
> **Sr. Director of Engineering,** *PMMI Member*

In small firms with fewer engineers, individuals often cover multiple roles. Mid-sized firms have more staff and therefore rely less on engineers to cover additional functions but can still be very lean. Managers often juggle supervision with hands-on tasks. Small ($0-50M) Medium ($50-$100M) and Large ($100M+) tend to have far greater specialization in the various engineering roles and are more likely to separate out administrative or support functions.

How many full-time engineers do you have in each of the following areas?

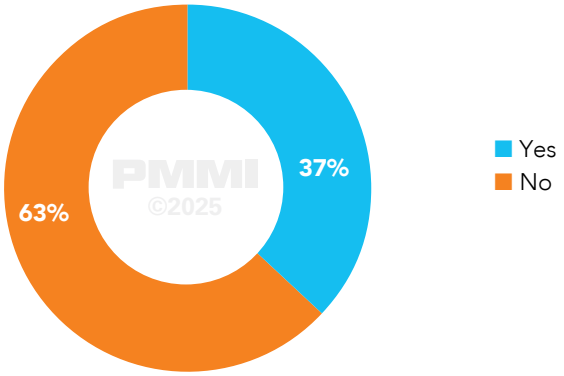


Engineers that had an average of 1 per engineering team were not included in this graph. Those not included are: Product Engineer, Manufacturing Engineer, Quality Engineer, Software Engineer, and R&D.

OUTSOURCING & PARTNERSHIPS

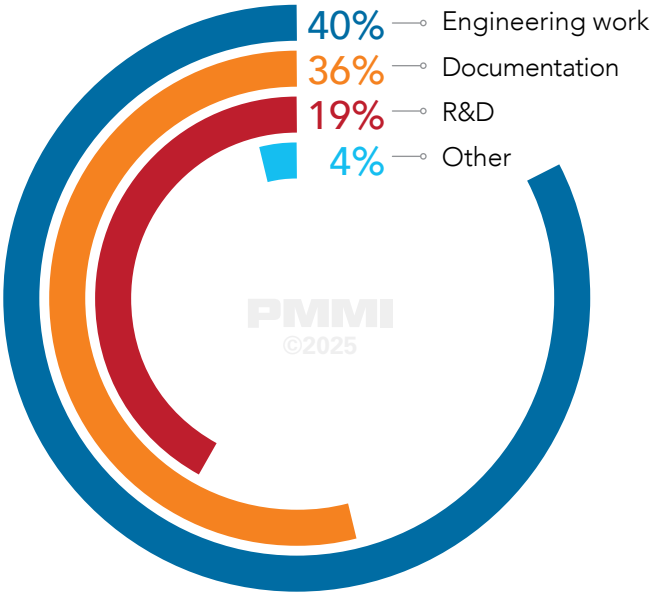
For companies that do not have all the relevant engineering skills in-house or have a temporary spike in demand for engineering capacity, outsourcing can provide a solution. The survey found that most packaging and processing equipment manufacturers (63%) are not currently outsourcing engineering functions. Among the 37% that do, it happens for a range of different reasons, including addressing skills gaps, increasing capacity, and bringing in specialist knowledge.

Does your company outsource (hiring third-party engineer/ engineering team) engineering functions?



More than one in three companies (37%) outsource some engineering functions.

What tasks has your company used your outsourced engineers for?



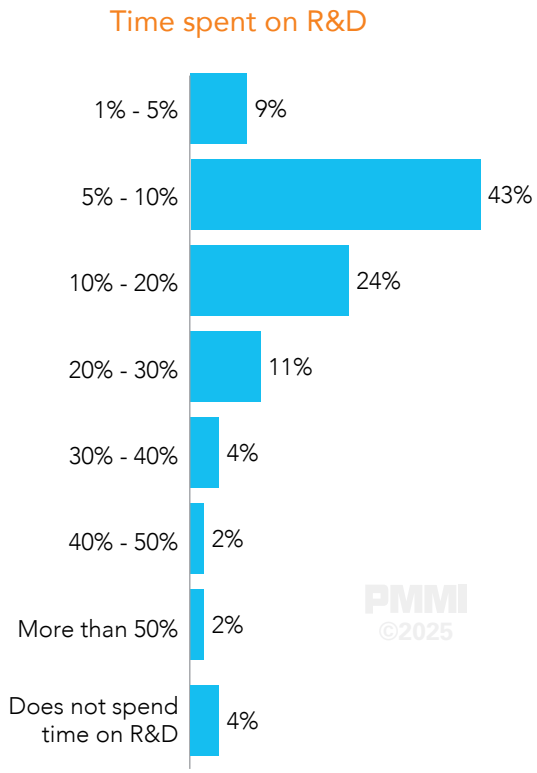
Other: PCL programing
Among those companies choosing to outsource engineering tasks, the primary reason given was engineering work.

> When we're outsourcing, we're looking for experience in the different areas that we need to get work completed. We're not looking to train anyone on the outside. So, it's hiring specific companies or people that know exactly what we're trying to accomplish internally.
>
> **Engineering Manager,** *PMMI ember*

According to survey respondents, the outsourcing of engineering is mostly used for tasks that require specialist knowledge, dedicating engineers experienced in very specific areas into projects or product development.

R&D

Out of the 72 survey respondents, 64% said their engineering team does not have dedicated R&D engineers. When asked what percentage of their engineers' time is spent on R&D, over 40% responded with a figure of 5%-10% of their time. Only 4% said they are spending no time at all on R&D.

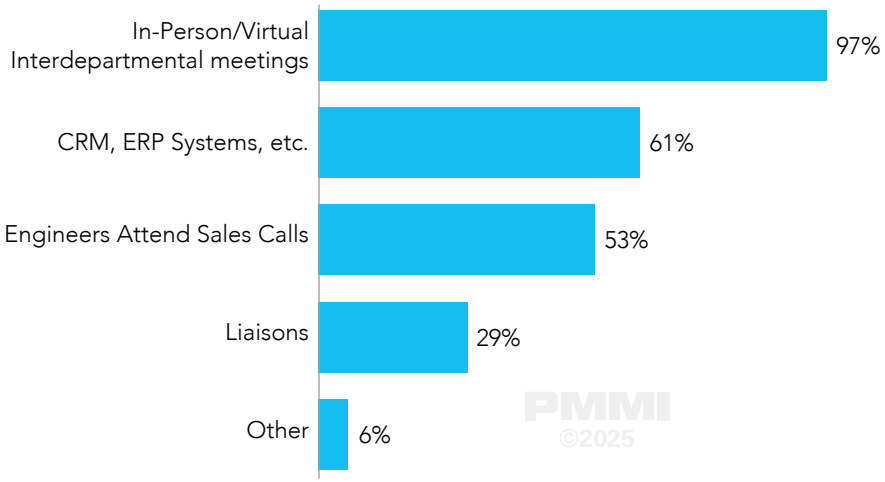


Out of all respondents, 43% of engineering departments spend between 5-10% of their time on R&D activities.

COLLABORATION ACROSS DEPARTMENTS

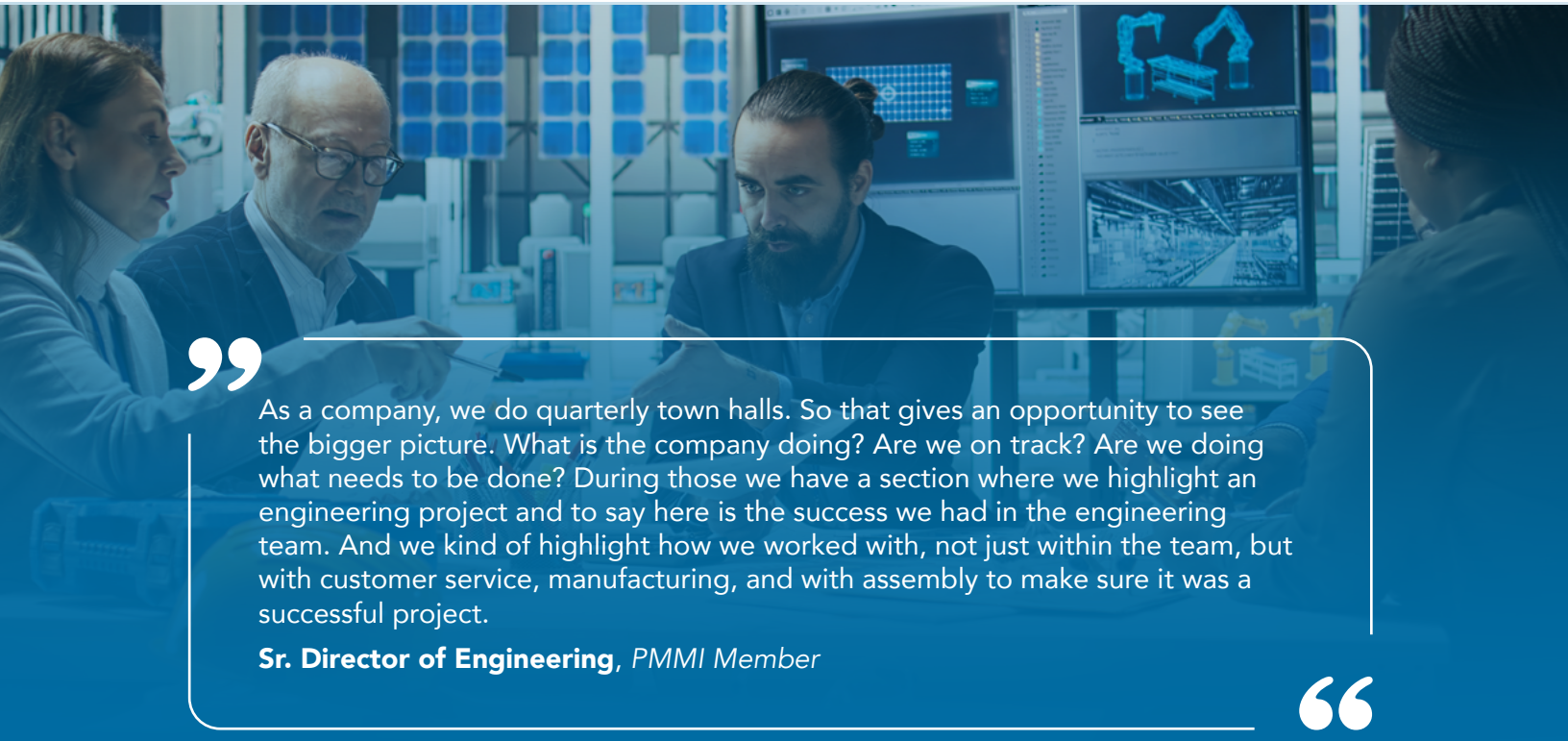
We asked respondents how their engineers collaborate and communicate between departments (marketing, sales, operations etc.). Communication between engineers and other departments is primarily in the form of in-person or virtual interdepartmental meetings.

How do your engineers collaborate and communicate between departments (Marketing, sales, operations)? (Select all that apply)



Other = Project-based Teams channels, Teams messages, virtual meetings

While most collaboration occurs between specific departments, some organizations engage company-wide communication efforts with one respondent commenting:



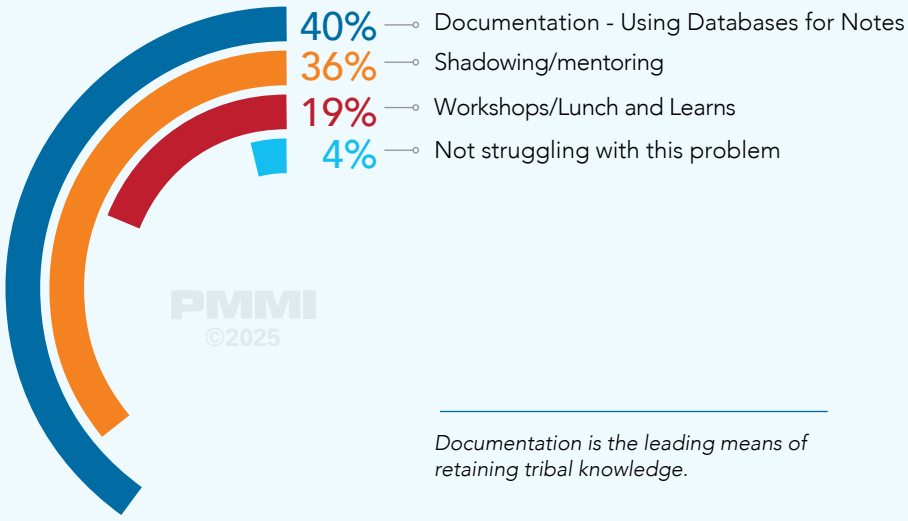
> As a company, we do quarterly town halls. So that gives an opportunity to see the bigger picture. What is the company doing? Are we on track? Are we doing what needs to be done? During those we have a section where we highlight an engineering project and to say here is the success we had in the engineering team. And we kind of highlight how we worked with, not just within the team, but with customer service, manufacturing, and with assembly to make sure it was a successful project.
>
> **Sr. Director of Engineering**, *PMMI Member*

TRIBAL KNOWLEDGE & KNOWLEDGE TRANSFER

The retention of tribal knowledge and the transfer of that knowledge is seen as a key issue within engineering departments. It can cause significant problems for companies if knowledge gathered over the course of many years is not retained.

As one respondent explained: "When I came in, my entire mechanical engineering team was brand new and I had to hire additional people, but we had lost the knowledge from the previous 30 years, and there was no one there to teach them. The only support we could get was from some of our fabricating and mechanical assembly team who had been around for 20 years. They knew how it worked. They didn't know why it worked. And we had to relearn the why part."

How has your engineering department mitigated problems with tribal knowledge - what are those efforts?



Documentation is the leading means of retaining tribal knowledge.

Our survey found that 40% of packaging and processing equipment manufacturers rely on documentation of knowledge via databases. However, documentation at a project level can be problematic and become obsolete or useless. This underscores the need for careful knowledge asset management. When asked about tribal knowledge and knowledge transfer, 36% of respondents transferred knowledge through job shadowing and 20% through workshops. Only 4% said knowledge transfer was not a problem. More detailed replies from respondents imply that structured mentoring and cross-training, the use of digital handbooks, SOPs, and templates, and the treatment of knowledge as a managed asset are best practices regarding the retention of tribal knowledge. One respondent described how their company has developed an effective means of knowledge transfer:

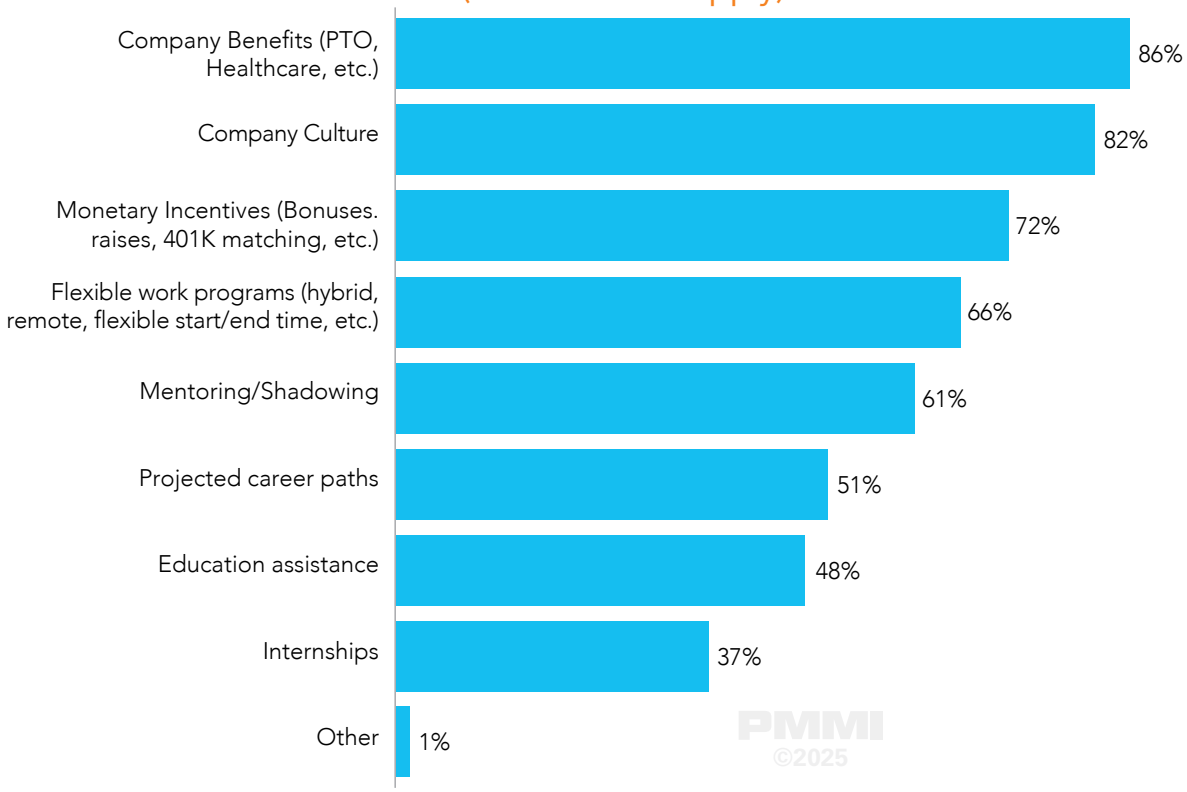
"We're creating what we call KBAs or knowledge-based articles….. We want you to write an article that could have photos, it could have videos, however you want to do it, to explain this specific subject. So, whether it's how to tension a belt, how to select the motor, how to pick the right extrusion for a specific application, it's their job to create that article or video or pictorial. It goes to a team that's the designated editors. They compile it and we're loading it into Salesforce, which is our CRM. That way customer service has access to it, our service team has access to it, the engineering team has access to it, and it's searchable."

Knowledge loss due to retirements is expected to be a major challenge over the next 1–3 years, but it is not the only concern. One manager emphasized the importance of engineers developing a broad range of skills to fill gaps created by turnover or the absence of key personnel. To address this, the manager encourages engineers to acquire multiple areas of expertise and does not allow them to specialize in just one machine.

RETENTION & WORKFORCE DEVELOPMENT

With the expertise and knowledge talented engineers possess, their retention by packaging and processing equipment manufacturers is seen as a major priority. In the survey, almost all (96%) the respondents believe their company offers competitive salaries. Other inducements include benefits such as healthcare, a good company culture, financial incentives, and flexible working hours. A full list of retention strategies can be seen in the chart below.

What are some strategies you have implemented to aid in retaining engineers? (Select all that apply)



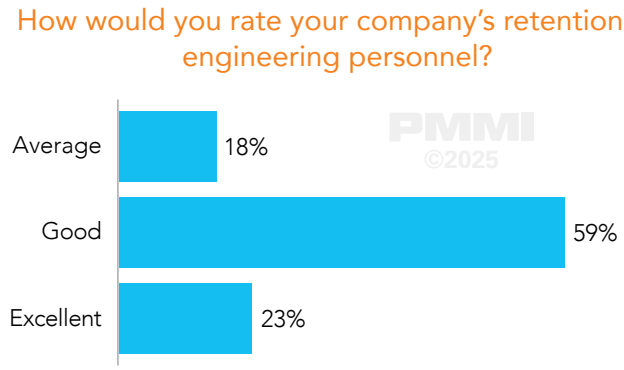
Other = Formal Early Career Development Program and PMMI organized career/professional development course. Offering a range of benefits to employees and developing a strong company culture are seen as key methods of retaining engineers.

Some packaging and processing equipment manufacturers have concentrated on company culture, finding novel ways to boost a sense of belonging and improve retention rates:

> We do social activities throughout the year, company barbecues and we bring in an ice cream truck. We try and organize other social events like bowling nights or go-kart race nights. We have a small community garden out the back…At the moment, our cafeteria is marked out with a badminton area. So, after work, the guys will push all the tables off to the side and they'll play. They'll have a small mini badminton tournament a couple of times a week
>
> **Engineering Manager**, *PMMI Member*

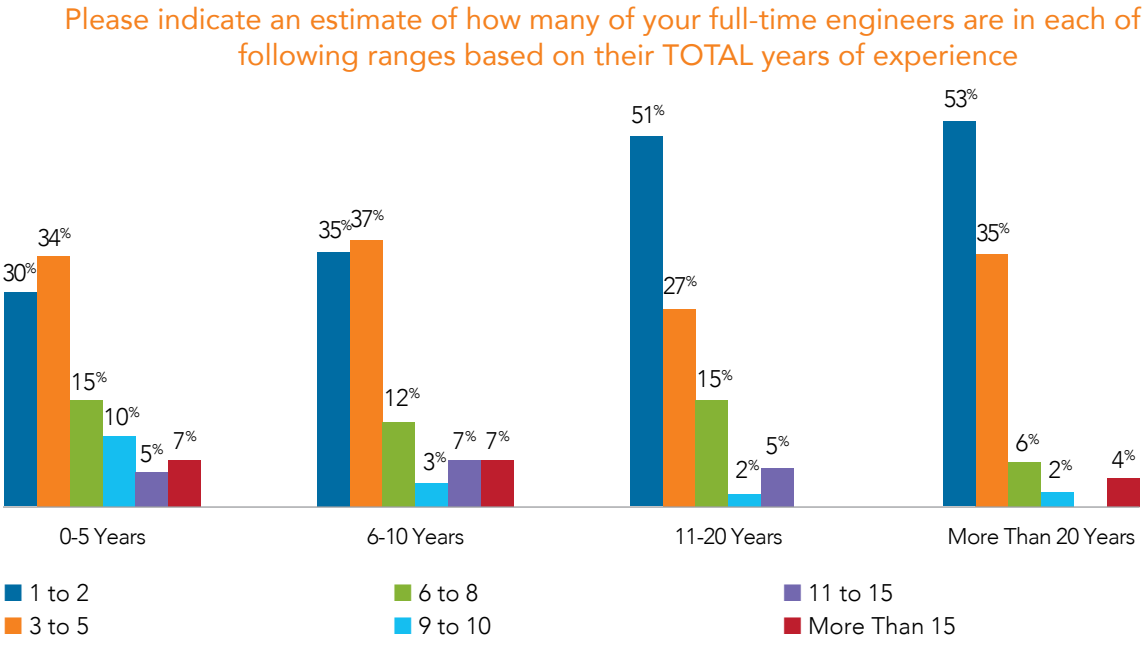
Respondents cited the need to work to the strengths of their engineers, and to acknowledge their good work. One person explained: "We have panels on the base of the machines on the inside of one of those panels to have credits like in a movie. "Mechanical design by", and the designer, "electrical design by", and the designer, project management by, et cetera. I want people to be proud of their machines, to have ownership of their machine and to see their name on the machine. Like 'I designed this'. [I] try and keep them engaged that way."

All these strategies help with retention, and most companies in our survey rated their retention strategies as either good or excellent.



Most companies rate their retention strategies as 'good', with none describing them as 'poor' or 'very poor'.

Where length of tenure for engineers is concerned, we can see that there are significant numbers of younger engineers within the 0-10 years of experience range. This group tends to be more dominant in smaller packaging and processing equipment manufacturers. In larger companies, more experienced engineers have a significant presence. However, smaller companies face a threat from larger firms poaching their best young engineers, who are attracted by the wider career prospects larger companies offer and the incentives they can afford to provide. Retention in smaller companies is often tied to a culture that creates a family-like work environment and the flexibility offered, while mid-sized packaging and processing equipment manufacturers can appeal both through their company culture and financial incentives. Larger organizations may have more formalized retention programs involving clear career paths.

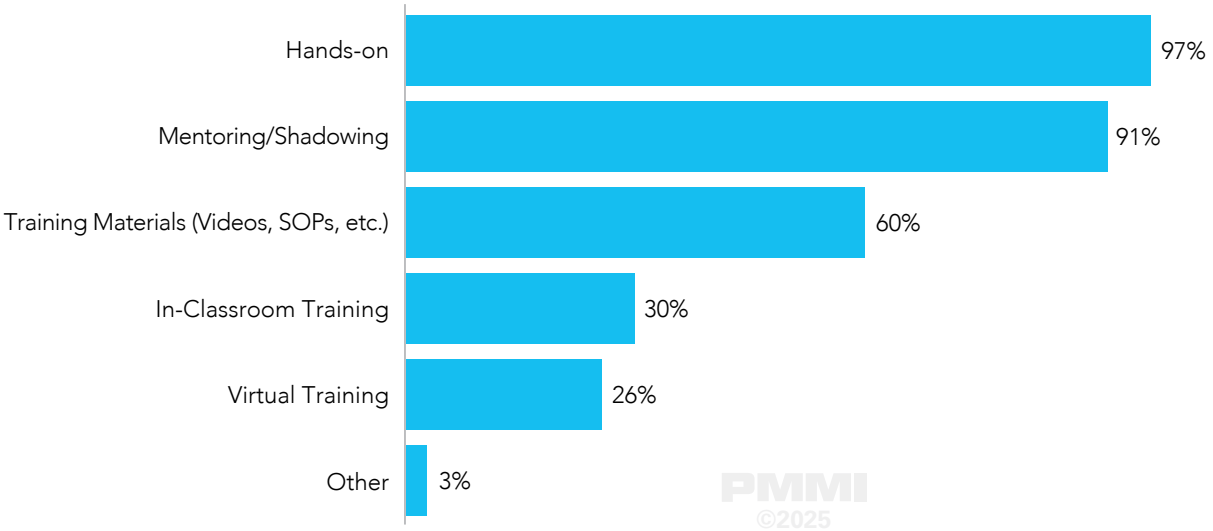


Larger companies have much greater numbers of engineers with many years of experience than smaller businesses.

TRAINING & PROFESSIONAL DEVELOPMENT

Survey data indicates that 'hands-on' training and mentoring, and shadowing are favored by a majority of companies. It's interesting that virtual training has only gained a strong foothold in the largest group of companies, perhaps indicating a greater willingness or more resources within larger companies to explore digital training methods. Examples of best practices cited by companies include formalizing mentoring with structured timelines/goals, balancing hands-on training with digital resources (videos, SOPs, knowledge databases), and funding continuing education tied to emerging needs (automation, AI, digital tools etc.).

What method(s) does your company use to train your new engineering hires? (Select all that apply)



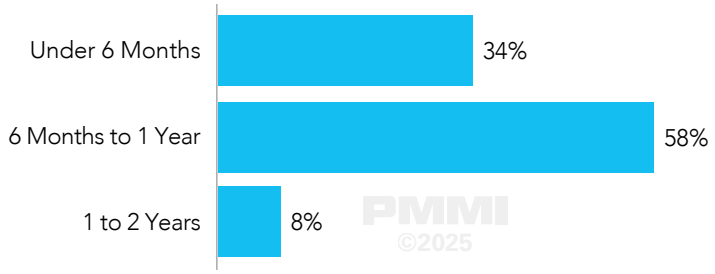
Other = Supplier/vendor training and send them to headquarters for training
Hands-on training and mentoring/shadowing are the most popular training activities among companies surveyed.

Interview respondents placed strong emphasis on the need to get engineers onto the shop floor so they can have hands-on experience with the machines they design, with one stating: "The most valuable for me is getting those people [mechanical engineers] onto the shop floor to actually hold tools, to see how difficult it is to access a bolt…. It gives them some experience on how difficult a design engineer could make life for technicians for no reason. Same with how difficult the electrical wiring system is. Same with automation; how readable or usable their program is, or their HMI is to use."

How long is training?

The training period for a new engineer varies from less than six months to two years. Larger packaging and processing equipment manufacturers may have the luxury of being able to offer more extensive training than smaller ones, which are constrained by the need to get staff working productively fast. One respondent from a small company commented: "We need them to be productive very, very quickly. We don't have the flexibility to have someone sit on a bench learning for six months. That's one of the challenges small companies face."

What is the training period for a new engineer to work independently?



Just 8% of companies take more than a year to train engineers before they are able to work independently.

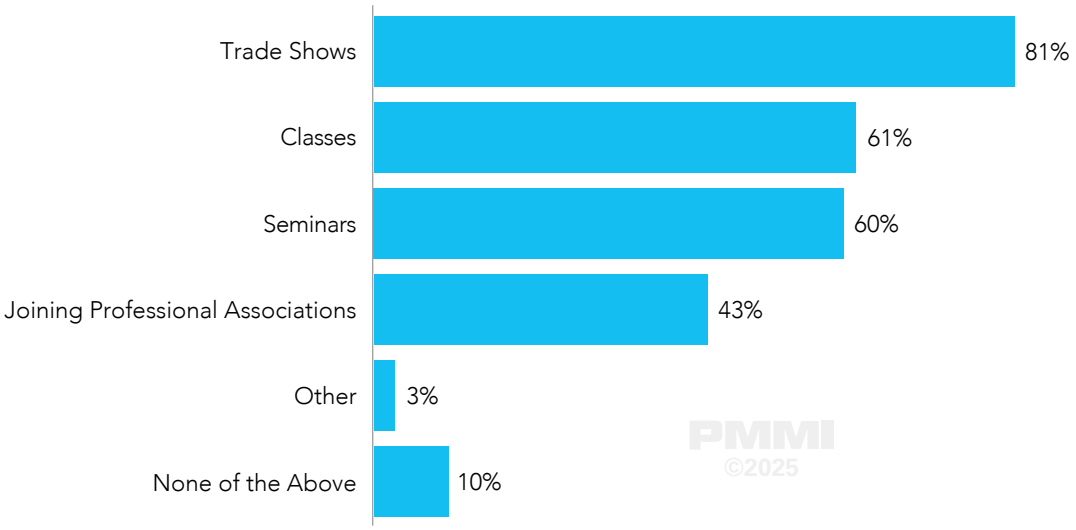
Professional development

With training, professional development of new engineers is focused on getting them out in the field to see machines in action. Practical application of knowledge is seen as crucial.

One respondent noted: "Generally, (the most effective is) the hands-on equipment training where you have part classroom, part practical application. So, especially for our programming and controls team, to be able to actually learn in the classroom and immediately apply it is the best way to learn. As opposed to just getting the information and then having to apply it a month or two down the road."

A substantial majority (81%) of companies responded that they expect engineers to attend trade shows. Classes and seminars are also popular routes for professional development.

What professional activities for engineers does your company fund for career development? (Select all that apply)

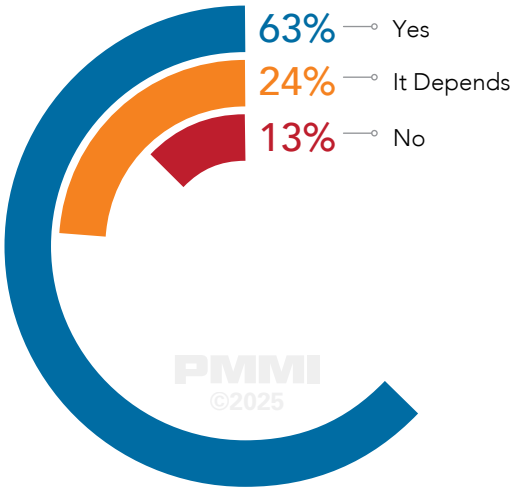


Other = Vendor based training sessions and In-Office teaching
Professional development plays a central role in best practice when managing engineers.

Do companies fund the education of their engineers?

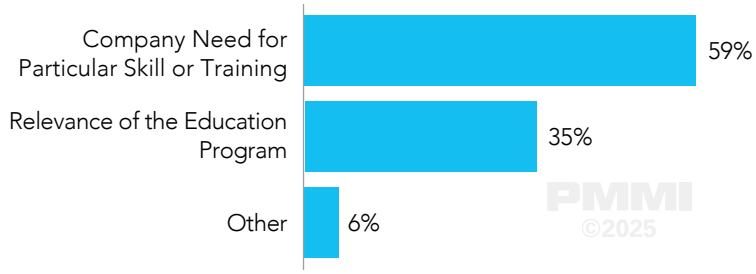
Funding education or continuing education of engineers is perceived as valuable, with almost two-thirds (63%) of those polled currently offering reimbursement or continuing education programs, and a further quarter (24%) doing so in the right circumstances. However, smaller companies report they have limited funds to pay for education programs for engineers, and, in general, depend on in-house, hands-on training. Paying for engineers to complete educational programs, such as university courses, is primarily done by larger companies that have the necessary funds available.

Does your company reimburse engineering employees for education or continuing education programs?



Almost two-thirds (63%) of companies have continuing education programs or reimburse engineers for courses, while a further one in four (24%) do so on a case-by-case basis.

What does reimbursement for education mostly depend on?



Other = If funding is available

Company need for a particular skill or training is the most important factor in determining reimbursement for education.

TECHNOLOGY & DIGITAL TRANSFORMATION

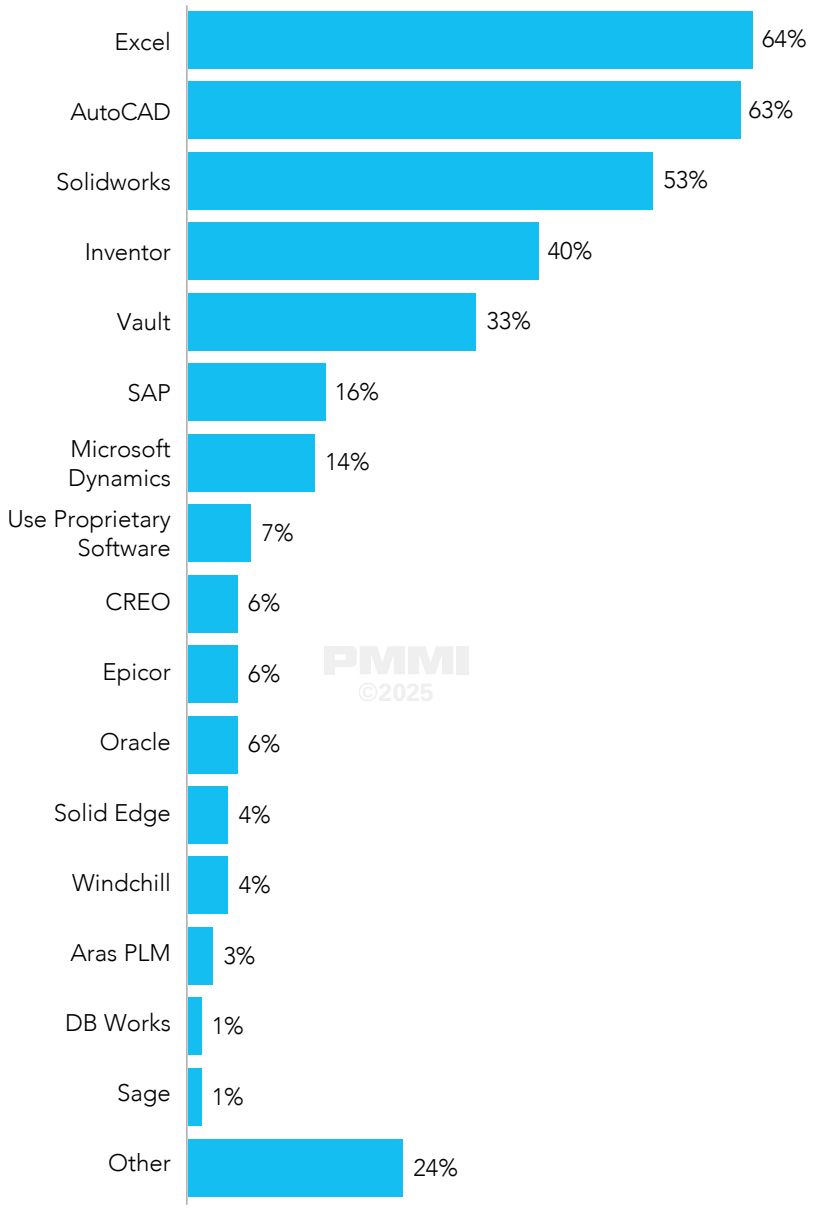
Use of next-generation technology such as AI, digital twins and simulation tools is increasingly being utilized by engineering departments and engineers to enhance their capabilities. Although adoption among OEMs is currently patchy, use of these technologies is most prevalent in larger companies. However, digital transformation is expected to gain momentum and play an increasing role in engineering functions.

Recent years have seen digital transformation, but challenges persist because of the wide range of software available. As a respondent noted: "I would say the biggest struggle is having the right software packages to manage projects. You know, because we've got sales, engineering, and service. We're kind of on three different levels. But all this information needs to marry back together and trying to find the software to handle it can be a challenge."

However, there does appear to be some consolidation taking place, with Excel, AutoCAD, SolidWorks and Inventor cited as popular software choices. One respondent claimed: "Nowadays, everybody in school is learning on SolidWorks or very similar programs. So, it's kind of an easy transition, but they definitely have to be a little bit more tech savvy. There's a lot of involvement now with the ERP system and stuff that, even when I first started in engineering, we didn't really have to deal with."

Smaller packaging and processing equipment manufacturers have a heavy reliance on Excel and make limited use of enterprise resource planning (ERP) and Product Data Management (PDM) tools. Mid-sized companies have computer-aided design (CAD) and ERP software in place but are struggling with integration. Large companies tend to have more advanced digital frameworks and are starting to invest in technology such as artificial intelligence (AI) and digital twins.

What software does your company use? (Select all that apply)



Other includes: Alpha4, MS SharePoint, MS Teams, Google suite, TwinCat, Emulate3D, EPLAN, Syteline, Access, FluidDraw (Festo), B&R Automation Studio,Teamcenter (Siemens/NX), SyteLine, E2 Manufacturing System, ETO, Baan, ProfitKey, Globalshop, Genius, DraftSight, Siemens UGNX, SolidWorks PDM

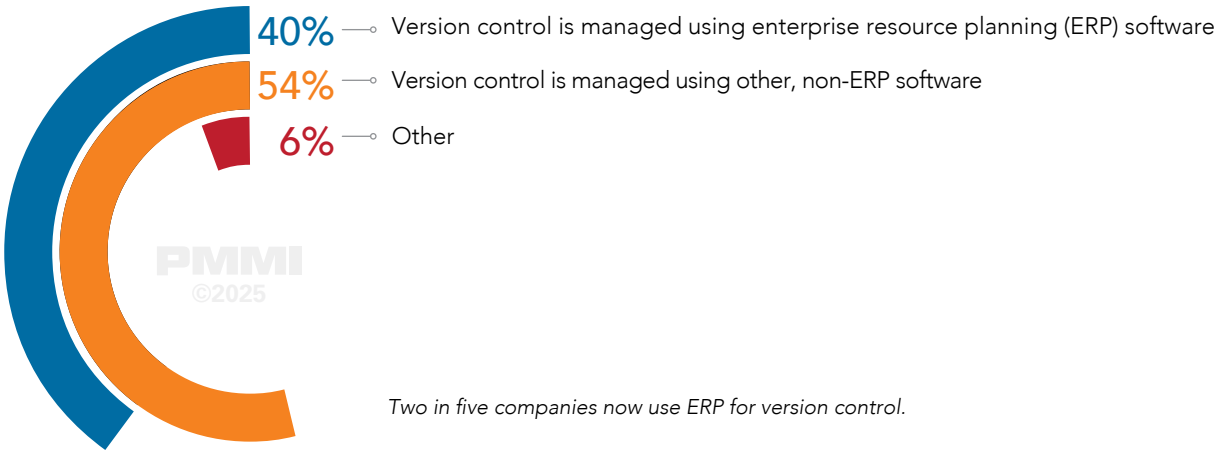
Excel, AutoCAD and Solidworks are all used by more than half of the packaging and processing engineers surveyed.

Version Control: ERP vs. non-ERP tools; challenges with manual tracking

Manual tracking and version control can be very imprecise and time-consuming for companies, so the use of ERP systems and related tools is becoming more prevalent.

As stated by one participant, "We've got a new program called CADLink and that basically links SolidWorks, our CAD program, to our ERP system. We're trying to use that to be able to automate a lot of that work. Instead of having to sit there and type for a couple days at the end of a project to get all this information in there, as long as they design the model right, it'll automatically flow into the ERP system."

How does your engineering department manage version control?



Two in five companies now use ERP for version control.

Other = Managed in department without software and tracked via spreadsheet - looking to update this method, Manually, and PDM

Capturing and tracking revisions to CAD models, electrical diagrams, and mechanical assemblies, as they happen, can save companies a great deal of time and money and improve reporting accuracy when reliable version control is implemented.

What are digital transformation best practices?

Best practices for companies where digital transformation is concerned include the creation of a roadmap: SOPs → integration → simulation, the use of simulation/digital twins for scalability, and the phasing in of AI-assisted design.

FUTURE CHALLENGES

Packaging and processing equipment manufacturers identify their primary engineering challenges as workforce transitions due to impending retirements, ineffective knowledge transfer, persistent hiring shortages, slow technology adoption, and increasing operational workloads. Recruitment and retention were frequently mentioned by respondents as an ongoing issue. Specific recruitment obstacles were cited, such as finding qualified people to fill the leading roles in an engineering team, identifying candidates that have a good work ethic, are self-motivated, and freely share information within departments, finding experienced controls engineers, and hiring new talent with emerging technical skills like AI. Developing the next generation of employees and implementing succession planning were viewed as key strategies for addressing workforce retention challenges and ensuring continuity within engineering teams. One respondent suggested: "The younger generations are less interested in overtime and relocation to accelerate their career and earnings. This will force us to reconsider our staffing and operating models to continue to be successful in the future. We expect larger waves of retirements over the coming years."

The challenges associated with an **aging** workforce and the impending retirement of senior engineering staff members demonstrate a critical need to ensure effective tribal knowledge transfer. One participant mentioned anticipating the need for transfer of knowledge between 10 or more experienced engineers and new hires to retain expertise within the company.

Some of those surveyed talked about a deficit in skills and **abilities** among new employees, claiming that engineering graduates are not leaving with the practical skills they need for the industry in which they are choosing to work.

A respondent explained: "We are seeing a slower uptick in capability with some subsets of individuals. They take longer to learn the appropriate skills. Some of the programs people are coming out of don't seem particularly oriented towards our specific industry." However, in other cases, positive statements were made about new recruits fresh out of school. One person outlined examples of best practices within their company when recruiting graduates:

> This is why I like taking kids out of school. We find out quickly, within six months, what their strengths are and what they like to do. Some people are visionary; they like to create things and design things. Some people are very detail oriented and meticulous. Some people like to work with their hands; they like to design something and then assemble it, test it, and do all kinds of R&D projects. We juggle people based on their personal characters. Not everybody is born a machine designer, not everybody's born an electrical software guy or a test engineer.
>
> **President/CEO**, *PMMI Member*

On the production side, future challenges are expected to arise around the adoption of new AI-related technologies and complex system integration (robotics, vision, safety, PLCs). Respondents project heightened scheduling pressures resulting from factors such as prolonged component lead times, the integration of modular and scalable production systems, and the continued growth of "engineered-to-order" manufacturing.

Packaging and processing equipment manufacturers expect growing pressure to reduce drawing/design errors and to place additional responsibility on engineers to manage new product development while processing standard product orders. They also expect to have to rise to the challenge of developing new engineering procedures to aid in more accurate estimation of time, resources, and materials, as well as improving the way they manage multiple projects with what could potentially be a small team and limited resources.

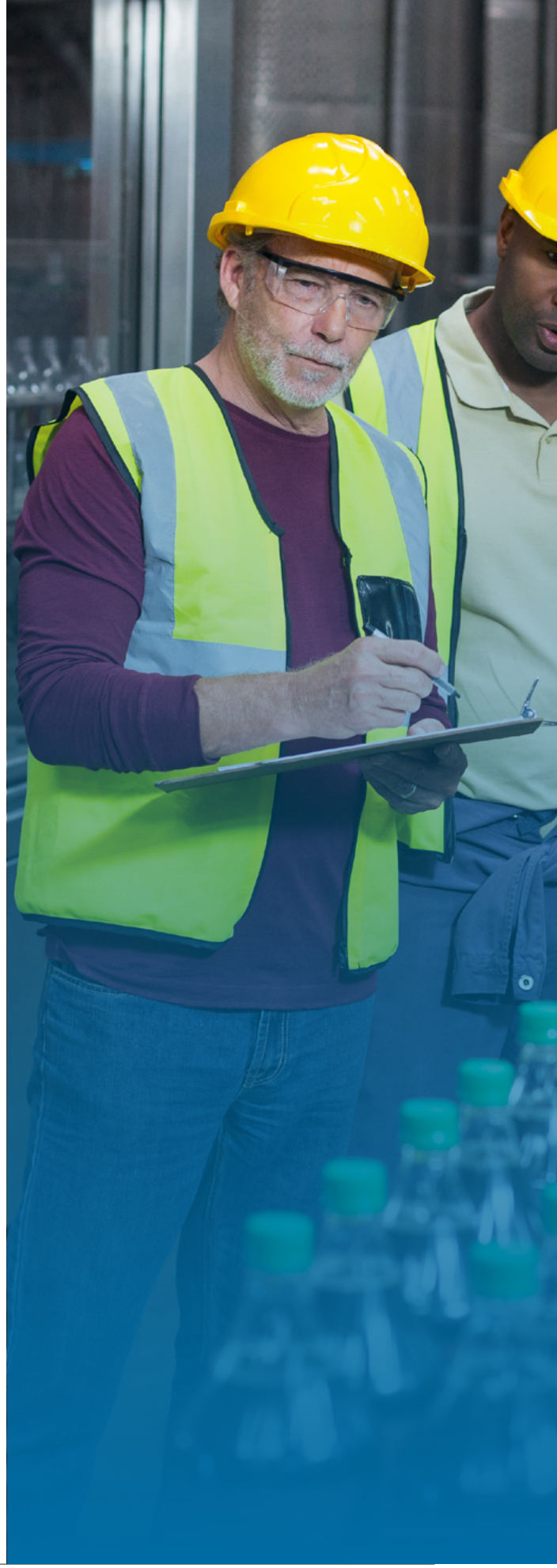
The geopolitical situation was also mentioned in responses, with workload increasing as manufacturing activity is reshored to increase resilience and reduce the impact of tariffs "We want to be able to perform and develop new products without being concerned about the politics, tariffs, and wars. The geopolitical situation hinders innovation," one participant stated.

Looking ahead, engineering departments expect to face continued pressure on three fronts: knowledge transfer, retention, and technology adoption. Comments like "pending retirements of senior staff will require us to transfer knowledge quickly" and the need to "keep pace with automation and digital tools" were echoed throughout the responses. Generational shifts in work preferences – particularly around relocation, overtime, and career progression – are also reshaping expectations.

Yet these challenges also highlight opportunities. Departments that institutionalize knowledge, invest in structured retention programs, and phase in digital transformation will be better positioned for growth. As one leader noted, "Connection with the shop floor is vital, not just sales." This mindset – positioning engineering as a strategic bridge – reflects how functions are evolving from purely technical to more diverse and leadership-driven roles.

What are best practices to address future challenges?

Organizations that frame pressures as opportunities for transformation, rather than obstacles, are finding ways to adapt and scale their operations. Whether by systematically capturing tribal knowledge, standardizing CAD models, piloting digital twins, or formalizing mentoring programs, the best practices are those that create continuity, engagement, and flexibility.



CONCLUSIONS AND RECOMMENDATIONS

The packaging and processing industry's engineering departments are not in crisis, but they are in transition. An ageing workforce and shifting workplace dynamics are accelerating the need for structured knowledge capture. Talent shortages are sharpening the focus on retention and early-career development. And, although adoption is still patchy, digital transformation is beginning to reshape how engineering departments design, document, and collaborate. As one respondent summarized, "The challenge has been transferring knowledge from experienced engineers to newer engineers, while applying AI and new software into practical realities."

The overall takeaway is this: departments that invest in both people and process will thrive. Those building digital frameworks for knowledge, formal programs for retention, and phased strategies for technology adoption are setting benchmarks others can follow. The current climate may be challenging, but it is also rich in examples of resilience, innovation, and best practices that can be scaled across the industry.

The best practices identified in this document provide a roadmap and demonstrate how packaging and processing companies can respond constructively to shared challenges. By adopting the best approaches for their needs, companies can position engineering as both a technical powerhouse and a strategic driver of long-term competitiveness.

Recommendations:

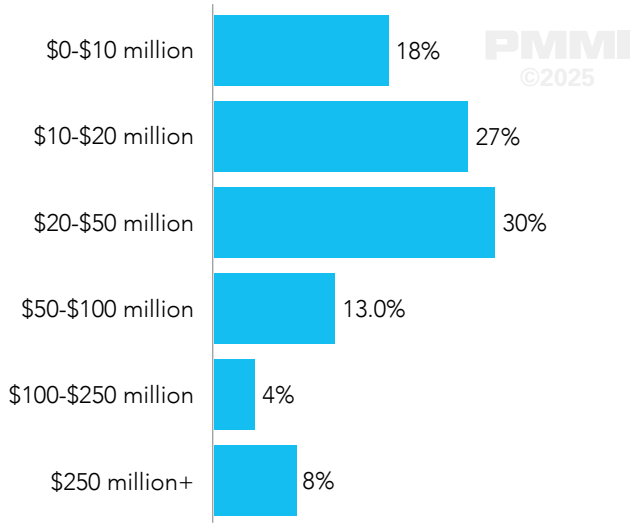
Codify tribal knowledge	• Move beyond informal mentoring to structured systems of knowledge capture, including digital handbooks, modular CAD/BOM templates, and standardized SOPs. • Encourage cross-training so younger engineers can shadow senior staff before retirement. • Treat knowledge as a corporate asset to be actively managed, not just passed along informally.
Invest in workforce retention and development	• Pair traditional benefits with formal career development programs and education reimbursement. • Build early-career pipelines through internships, apprenticeships, and partnerships with universities and technical schools. Recognize generational shifts by offering flexible work arrangements and clear career progression paths.
Adopt technology strategically	• Adopt a phased approach to digital transformation through roadmaps. Stabilize and standardize processes, then integrate ERP/CRM systems, and finally implement advanced tools like simulation, digital twins, and AI-assisted design. • Balance customization with modular design to increase scalability while still meeting customer requirements. • Involve engineers directly in technology adoption to ensure tools align with practical needs.
Leverage outsourcing selectively	• Use third-party engineers for specialized tasks (e.g., PLC programming, documentation, or niche R&D) and overflow capacity, but keep core competencies and knowledge in-house. • Ensure that knowledge gained from external partners is captured and integrated into company systems.
Strengthen engineering's strategic role	• Position engineering not only as a technical function but as a cross-functional leader that connects sales, manufacturing, and operations. • Clarify roles and responsibilities to reduce overload, while giving engineers opportunities to contribute strategically.

RESEARCH METHODOLOGY

PMMI Business Intelligence employed a mixed-methods approach to provide both breadth and depth of understanding engineering best practices. All participants in the quantitative and qualitative research were PMMI members. The initial phase consisted of short, exploratory interviews with engineering leaders to help identify the most pressing issues facing engineering departments today. Chief among these were employee and skills retention, tribal knowledge loss, and the pressures of digital transformation. These insights guided the development of a comprehensive survey distributed across the packaging and processing industries, yielding 72 responses.

Our survey covered a broad cross-section of company sizes and structures, with a majority of participants (57%) representing mid-sized firms in the $10–$50 million revenue range. To complement the survey data, six in-depth interviews (lasting between 30 and 45 minutes) were conducted. The dual methodology allowed the study to balance statistical reliability with context-rich narratives, producing a report suitable for both benchmarking and strategic planning.

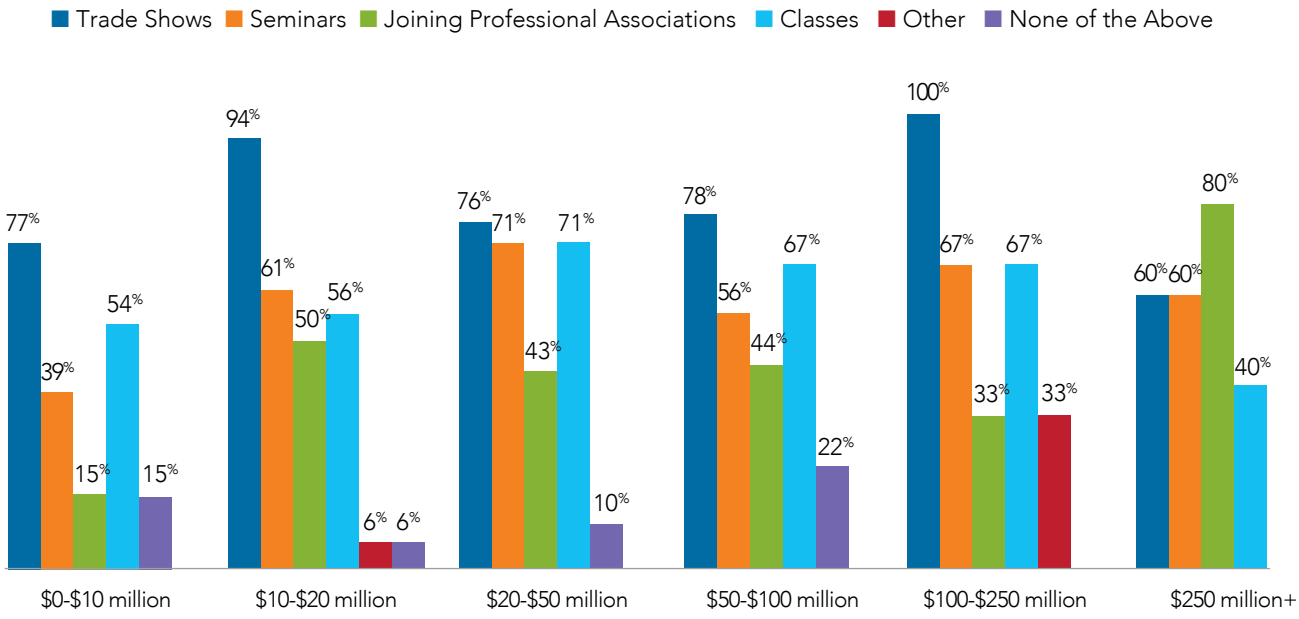
What is the annual sales volume of your organization?



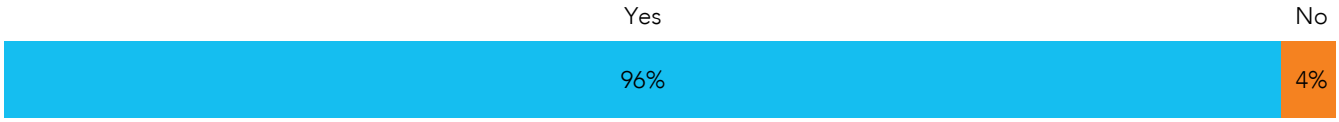
The majority of respondents (57%) were companies with annual revenues of $10-$50 million.

APPENDIX

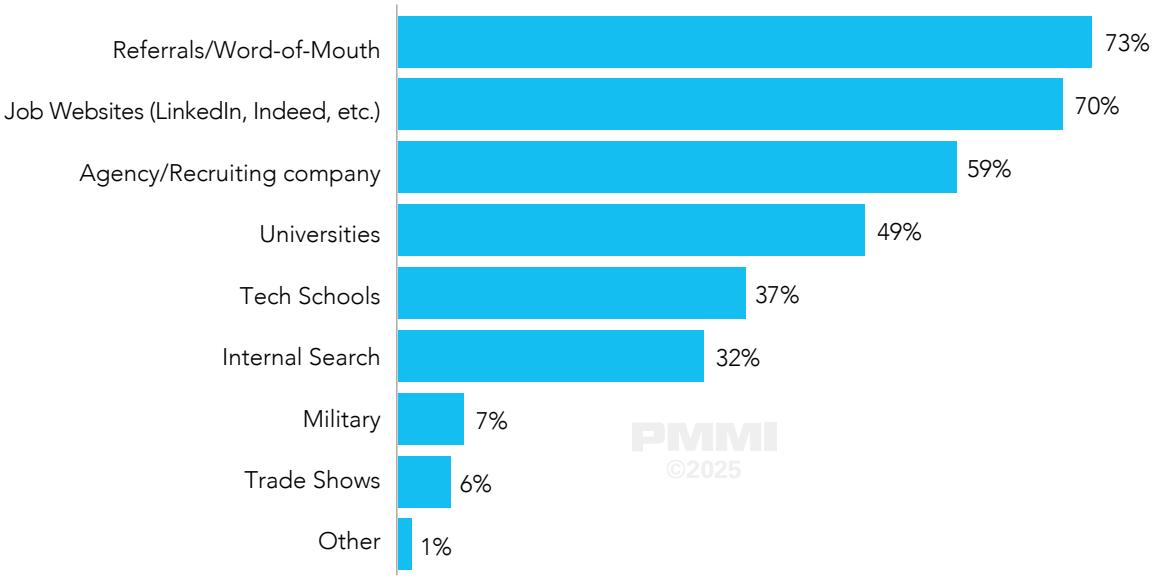
What professional activities for engineers does your company fund for career development annual revenue? (Select all that apply; Data by Annual Revenue)



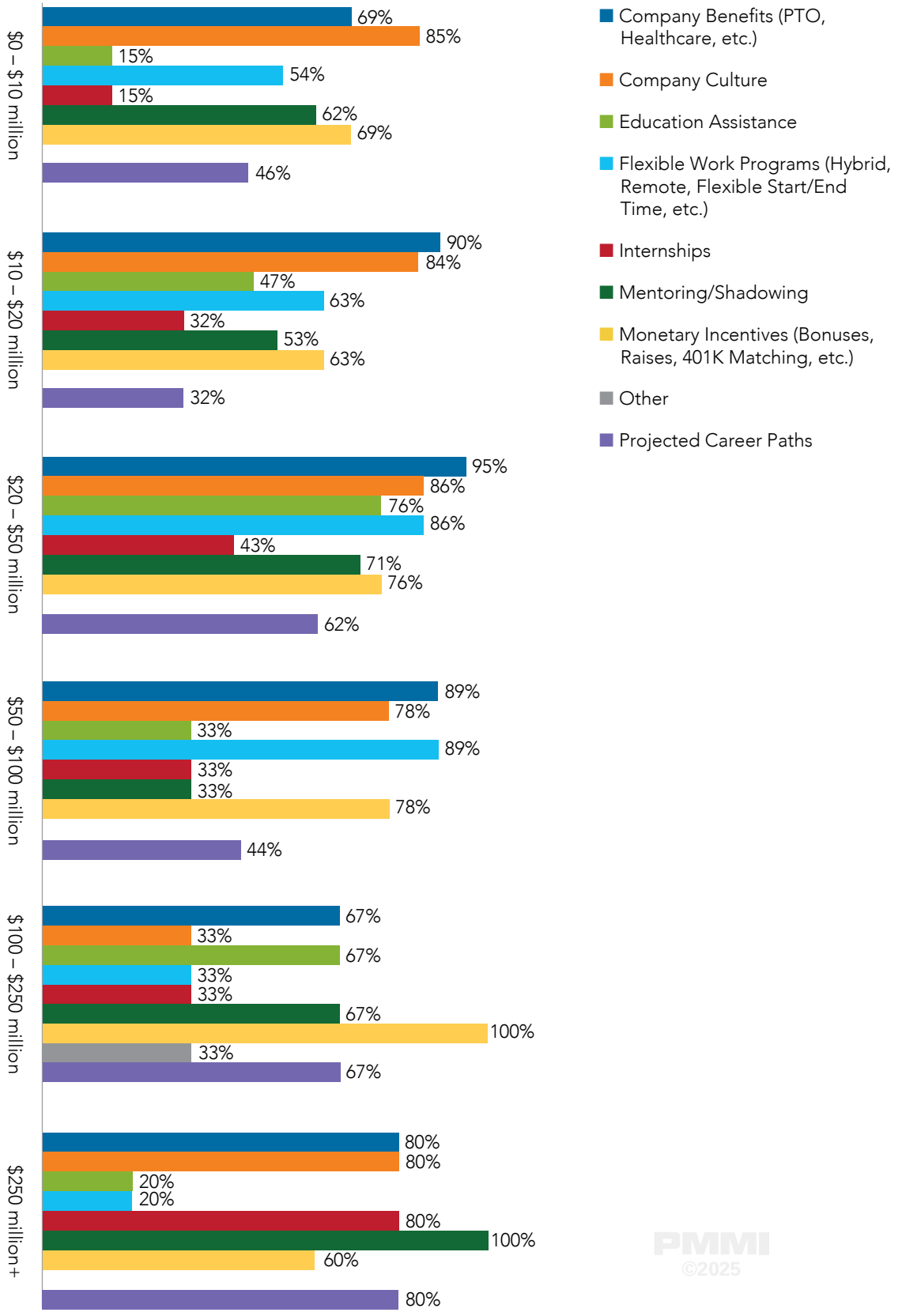
Do you offer engineers a competitive salary?



How does your company recruit engineering personnel? (Select all that apply)



What are some strategies you have implemented to aid in retaining engineers by annual revenue (Select all that apply; Data by Annual Revenue)



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