


Making Teams Work

Study pinpoints
strengths and
weaknesses



Cross-functional teams, long a fixture of the E&C side of the chemical business, spread to most parts of the industry with the rise of team-based decision making in the late 1980s and early 1990s.

Teams have been used for almost every industry function imaginable, and no impartial observer can doubt their popularity in chemical plants and refineries.

Yet much remains puzzling. What are the strengths of cross-functional teams and team-based decision making? What are the weaknesses? Where are teams most effective? Where are they least effective? Is team-based decision making worthwhile at all?

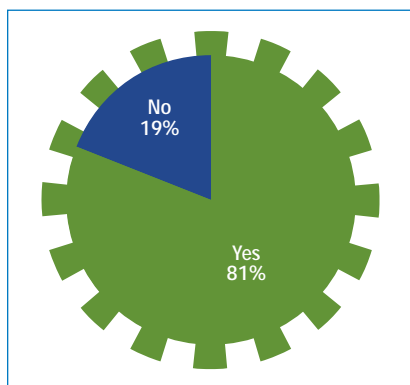
Those are just a few of the questions the editors of *Chemical Processing* sought to answer when they undertook this groundbreaking benchmark study on the effectiveness of cross-functional teams in the chemical industry.

Widely used, firmly entrenched

One obvious conclusion from the survey of 1,000 randomly chosen *CP* readers is that cross-functional teams and team-based decision making are as widely used as presumed: Fully 81% of the respondents said their companies use teams (Fig. 1).

Moreover, the use of teams is a mature, firmly entrenched practice. More than two-thirds of the respondents whose companies use cross-functional teams said they have been doing so for five years or longer (Fig. 2), and the average was eight years.

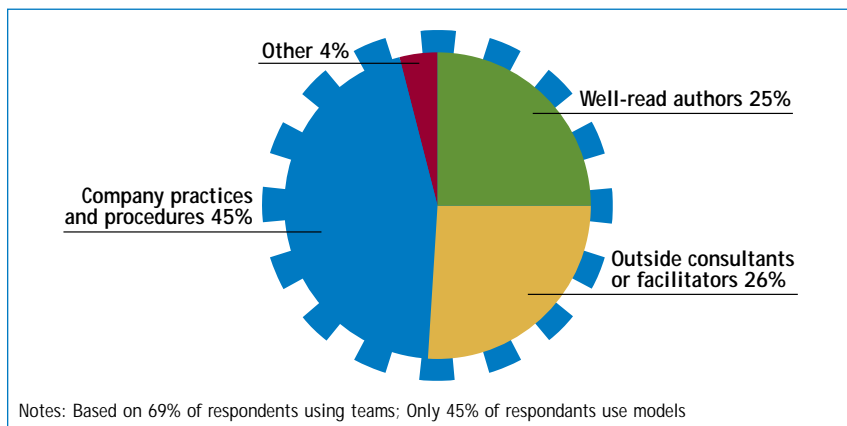
Fig. 1. Does your company use cross-functional teams?



In fact, comparing these numbers to data developed by *Chemical Processing* in 1995 for internal use, it appears that the growth of cross-functional teams hit its current plateau in the mid-1990s.

In that earlier study, for instance, 79% of *CP*'s readers said their companies were using cross-functional teams.

Fig. 3. What sources do you use to develop team models?



Delving further into the most recent data provides a closer look at the foundations, forms and functions of decision-making teams in chemical plants and refineries.

For instance, ideas on team development are mined from a wide variety of resources.

About 40% of the respondents said they use consultants or outside facilitators in developing their teams, with approximately three-fourths of the facilitators staying on until the team is dissolved.

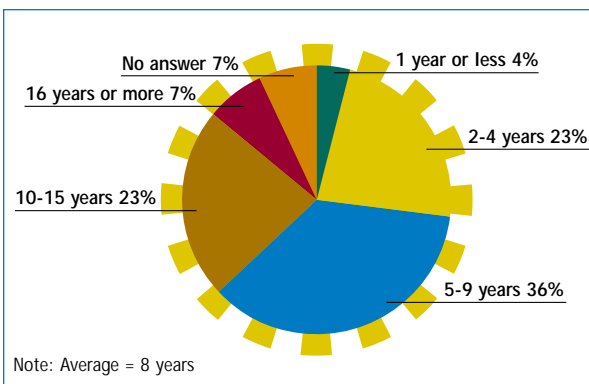
Another 40% said they used references in devising their teams, mentioning in-house manuals, ISO and TQM training guides, and books from stalwarts like Deming and Juran, among other materials.

About 45% of the respondents said their companies have written guidelines on team composition and functions, usually developed by "corporate," "management" or "team" bodies.

Additionally, 69% of respondents identified sources used in developing team models. Of those models, 45% come from company practices and procedures, 26% from outside consultants or facilitators, 25% from well-read authors and 4% from "other" (Fig. 3).

However, the wide range of choices in reference materials could have

Fig. 2. How many years has your company been using cross-functional teams?



drawbacks, implied one respondent who said his resource "depends on the program of the month."

Like the resources available to team members, the composition of a facility's cross-functional teams can also come in many shapes.

Although the average team numbers seven members, greater than 80% of the teams have between five and 10 members (Fig. 4).

Similarly, while plant management and operations, engineering and maintenance are the most-frequently represented job titles or functions on facility teams, there is also significant representation from purchasing, R&D and corporate personnel (Fig. 5).

Approximately one-third of the teams meet weekly and about 80% meet at least monthly. The average life span of a plant's cross-functional team is 9.3 months.

About 60% of the respondents said their facilities have permanent teams (as distinct from those organized for a specific assignment). Although some of the standing teams address up to 10 assignments, more than half take on three or fewer.

Eighty-five percent said their team leaders are appointed, and roughly half said their leaders change during the life of the team. That high turnover makes sense considering that only 9% of the respondents said their team leaders receive bonuses.

On the macro side, approximately 32% of the companies have a formal organizational chart to plot how all of

a facility's teams interact.

Functions and effectiveness

Teams perform a variety of functions. The top eight problems addressed by teams are process management, safety compliance, quality/customer relations, construction projects, product development, environmental compliance, maintenance/repairs, and equipment purchases (Fig. 6).

Permanent teams, the respondents said, most frequently address (in descending order) safety compliance, multipurpose, process improvements, quality, supply chain management, environmental concerns and maintenance assignments.

That's not to say teams necessarily perform all of their functions well, however.

In fact, *Chemical Processing* found satisfaction and dissatisfaction in equal

measure when plant-based readers were queried on the effectiveness of teams over a wide range of functions.

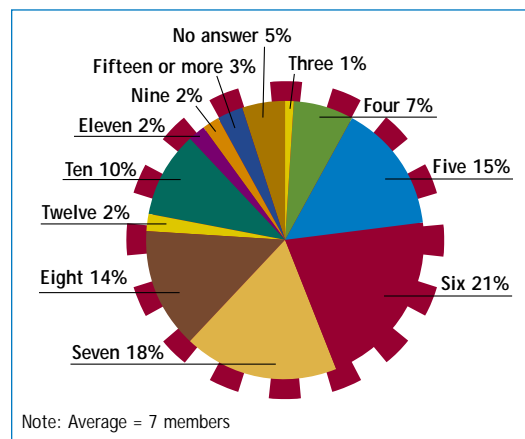
Overall, although 56% of the respondents rated team-based management as "effective," nearly 40% found it of only average effectiveness.

The mixed feelings came out more clearly when readers were asked what tasks cross-functional teams carry out most effectively and least effectively.

The five tasks judged most effectively handled by teams are process improvements, safety compliance, construction projects, product development and quality/customer development (Fig. 7).

Among the tasks teams were judged least capable of handling effectively

Fig. 4. Typically, how many members are on your team?



were hiring consultants, personnel and staffing, maintenance and repairs, hiring E&C firms, and equipment purchases (Fig. 8).

While 35% of the respondents said that belonging to a team did not take

too much time away from performing their jobs, 12% said that it did and 53% said that it “sometimes” did.

Mixed reviews

Looking further into the strengths and weaknesses of teams as viewed by four different job functions, it also becomes apparent that engineering, production/plant operations personnel, general management and R&D employees hold very different views on the effectiveness of teams.

For example, in comparing responses from these four groups, the highest approval rating for the overall effectiveness of team-based decision making came from readers identifying themselves as general management (77%), and the lowest came from respondents from the R&D ranks (40%).

Although the two groups strongly disagreed on that issue, neither

finds the demands of teams too arduous: Only 5% of general managers and 15% of R&D personnel said being on teams takes too much time away from their core functions.

Perhaps not surprisingly, readers identifying themselves as production/plant operations and engineering employees reported having the least time for teams, with 40% each saying that it took too much time.

Among the most revealing findings, the readers from each of the four job groups hold remarkably similar views on the effectiveness of teams for specific tasks.

For instance, all four job groups thought teams were

Fig. 5. Which job titles or functions are represented on your facility's teams?

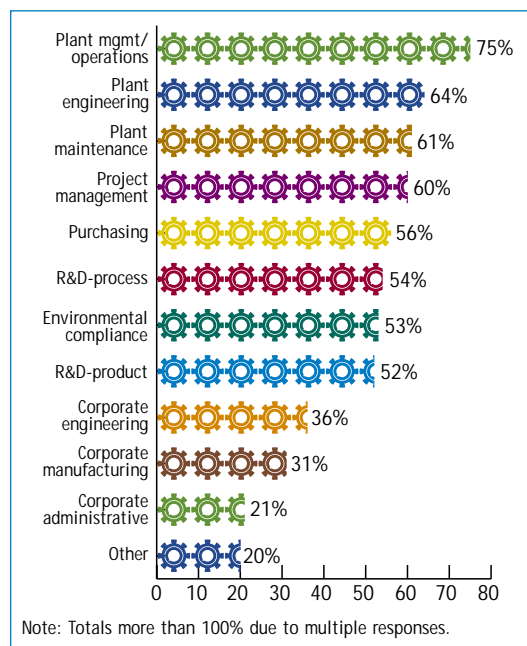
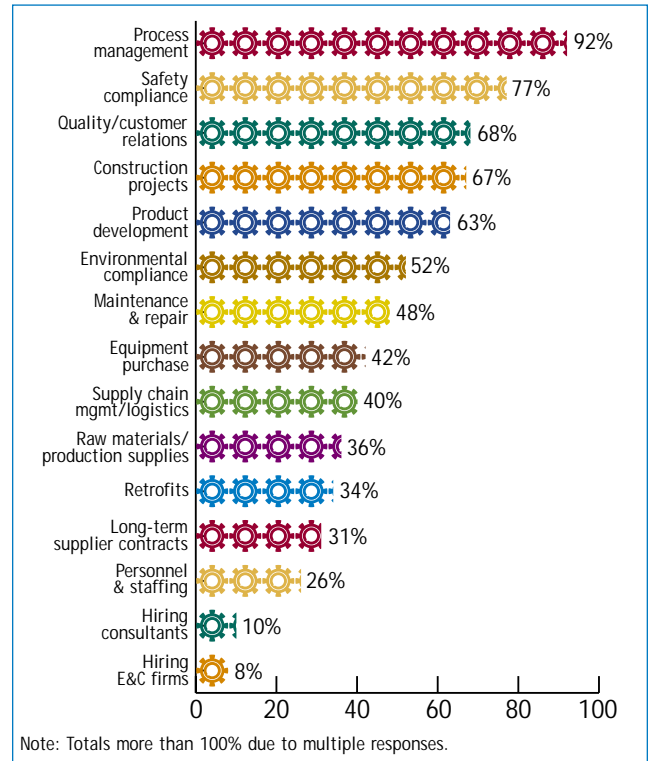


Fig. 6. What do teams address in your company?



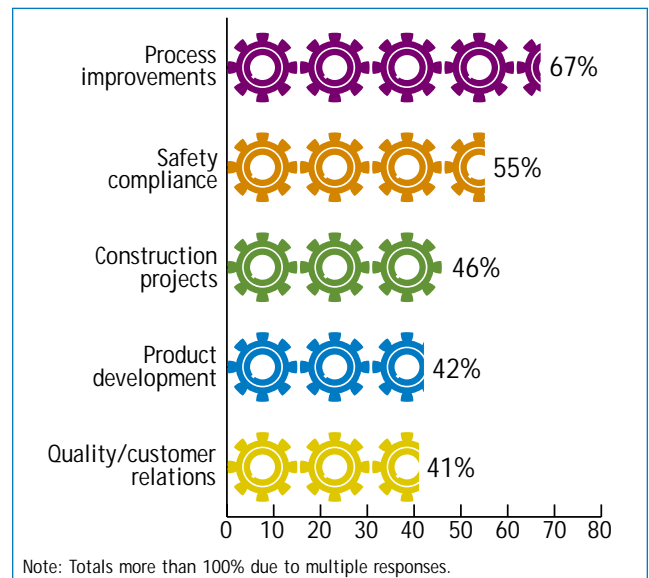
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most effective at handling process improvements. Safety and quality/customer relations also ranked in the top four “team effectiveness” ratings for all of the job groups.

Engineers, production/plant operations personnel and R&D employees also said construction projects were among the four most effective uses for teams, while general management employees were alone in saying that supply chain management was among the four best uses.

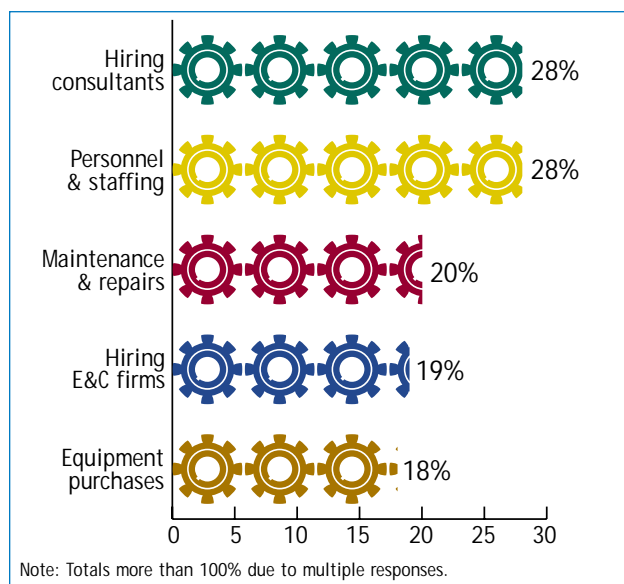
Views among the four job categories varied more with regard

Fig. 7. Where are cross-functional teams most effective?



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Fig. 8. Where are cross-functional teams least effective?



to where teams are least effective, although teams appear to get a universal thumbs down on many purchasing, hiring and staffing decisions.

According to respondents in general management, teams are least effective for hiring consultants, personnel and staffing, maintenance and repairs, hiring E&C firms, long-term supplier contracts and environmental compliance, in that order.

Similarly, production/plant operations personnel believe the least-effective use for teams is personnel and staffing, followed by equipment purchases, hiring consultants, maintenance and repairs, long-term supplier contracts and purchasing raw materials and production supplies.

Many of the same concerns were voiced by the engineering group, who said teams are least effective for hiring consultants and E&C firms, followed by personnel and staffing, maintenance and repairs, retrofits and supply chain management.

Joining in some of these views, R&D personnel said teams were least effective for personnel and staffing, equipment purchases, buying raw materials and production supplies, product development, environmental compliance and hiring E&C firms.

Many of the negative ratings come

from the very different experiences in the four job areas with the frequency of team meetings and the subject matter that's addressed.

For example, general management employees report the lowest frequency of team meetings, while R&D employees report the highest. Similarly, plant operations/production and engineering respondents have far more experience on environmental teams than general management employees and somewhat more than R&D personnel.

In addition to the influence of job functions, opinions on the effectiveness of teams also vary according to the size of a respondent's facility.

In general, larger plants have more experience and history with teams and are more likely to use facilitators. However, their teams also face challenges that teams in smaller facilities don't have to overcome.

For instance, teams from larger facilities are likely to have more members.

While 53% of the respondents from plants with fewer than 100 employees said they didn't find teams taking too much time away from their core job functions, 58% of the respondents from facilities with more than 100 employees said they did.

That may help explain why an over-

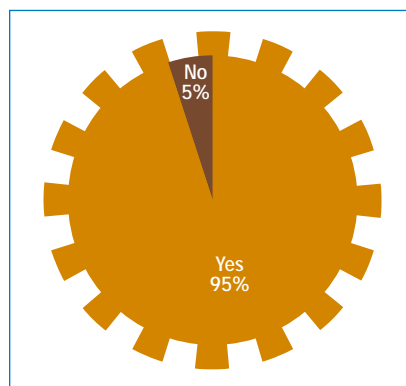
whelming 75% of the respondents from plants with fewer than 50 employees judged teams to be effective, while only 55% of the people from plants with more than 50 employees found teams to be effective. On a task-by-task basis, an overwhelming number of respondents from all plant sizes said teams are effective in handling process improvements and safety compliance. Teams also got high marks for product development and construction projects.

Responses were also similar across size categories when readers were

asked to name tasks that teams handle least-effectively, with purchasing, hiring and staffing getting the most negative ratings.

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Fig. 9. If it were up to you, would you choose to have cross-functional teams at your facility?



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Problems and challenges

For all its problems, cross-functional team-based decision making appears firmly entrenched in the chemical industry, not so much because top management has pushed it as because most rank-and-file employees have accepted it. Most would rather have teams than not (Fig. 9).

The challenge for leaders, facilitators and members is to figure out where team-based management is effective, where it's not, where it should be added and where it should be dropped.

By Mike Hrickiewicz, executive editor; and Peter J. Knox, editor-in-chief and associate publisher