ENHANCING PROJECT MANAGEMENT
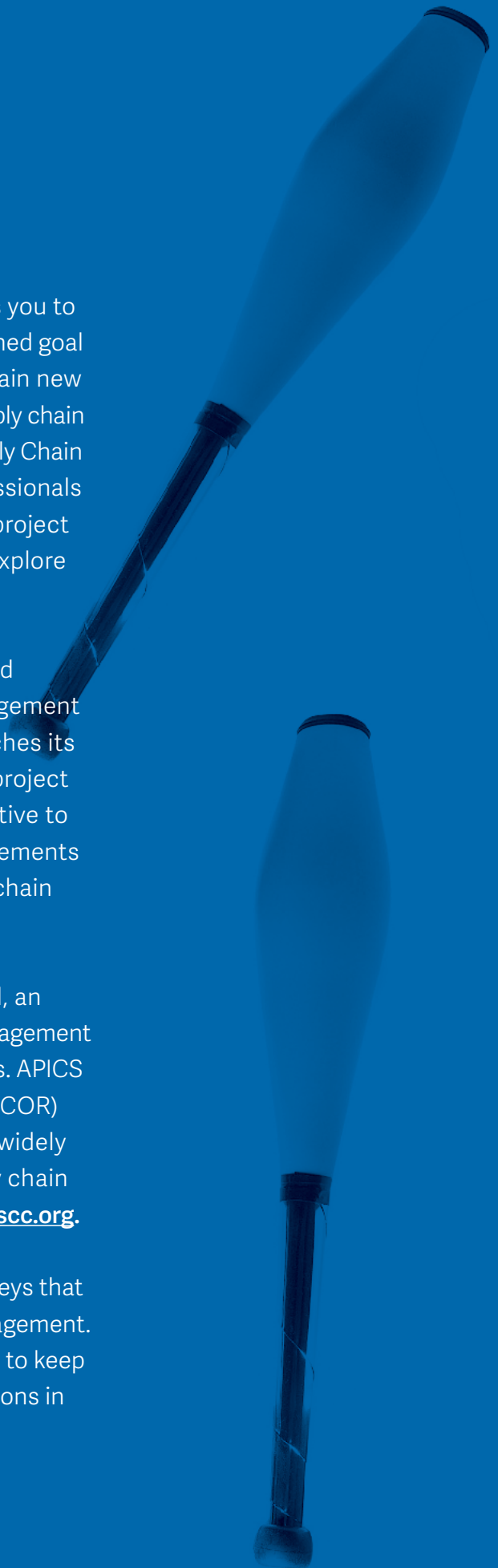
APICS

SUPPLY CHAIN
COUNCIL

ABOUT THIS REPORT

Supply chain project management is a process that allows you to coordinate resources and activities in order to deliver a defined goal within a set timeframe, budget and scope. In an effort to gain new insights into project management best practices among supply chain and operations management professionals, the APICS Supply Chain Council conducted a survey of APICS members and professionals to determine how often individuals practice supply chain project management in addition to other responsibilities, and to explore project management challenges and innovations.

Project management is a good way to create structure and predictability from complexity. Multifaceted project management is required to ensure that a defined supply chain task reaches its finish on time, on budget and within scope. Supply chain project management has a scope, both internal and external, relative to the organization. As a specialty, it serves the unique requirements of projects that span the dynamic relationships of supply chain participants located inside and outside organizations.

This report was developed by APICS Supply Chain Council, an organization that advances supply chain and operations management and innovation through research, education and publications. APICS SCC maintains the Supply Chain Operations Reference (SCOR) model, the supply chain management community's most widely accepted framework for evaluating and comparing supply chain activities and performance. **For more information, visit apicsscc.org.**

APICS SCC research reports are based on practitioner surveys that explore trending topics in supply chain and operations management. They include survey results, analysis, tips and best practices to keep you and your organization informed of insights and innovations in supply chain and operations management.

ENHANCING PROJECT MANAGEMENT

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ENHANCING PROJECT MANAGEMENT

Project management:

The *APICS Dictionary,* 14th edition, defines project management as "the management system that enables business imperatives and strategic goals to be accomplished." If growth is a goal, for example, projects are developed to introduce new factors affecting customer behavior. Project management is the methodology by which goals are assigned and resources and plans are developed and monitored to achieve these goals.

EXECUTIVE SUMMARY

Project management is an important and sometimes weighty responsibility. It is an essential area and function, but one that lacks visibility and maturity in many organizations. APICS SCC conducted a survey of supply chain and operations management professionals in order to:

- Determine where practitioners stand in terms of supply chain project management.

- Evaluate how often professionals practice supply chain project management in addition to other responsibilities.

- Explore areas professionals find challenging and whether those challenges reveal insights into developing best practices.

Project management trends revealed by APICS SCC research

As the APICS SCC research survey results were analyzed, clear trends in project management emerged. The research showed that a majority of industry professionals are experienced in supply chain project management, but that they still face significant challenges related to project management. Our results revealed the following four trends:

- Practitioners don't know whether supply chain projects are completed on time, on budget and/or within scope. Practitioners' lack of knowledge about project completion may have a number of causes: lack of management-perceived need, lack of organizational project management skill and support, and possible organizational behavior and teamwork that fail to adequately prioritize communication of project outcomes.

- Significant numbers of practitioners work on projects—sometimes large and complex projects—with little backup in terms of training or staff that specialize in project management. This is a potential gap in management strategy that may impair achieving supply chain excellence.

- Successfully completed supply chain projects, even major projects, are often not formally recognized. Project participants across the supply chain may not be aware of the project outcome, which creates unnecessary uncertainty or even continuation of project-related practices that are no longer needed.

- Few project management tasks are overly difficult. Many tasks are only moderately difficult, such as scoping, tracking, anticipating and following up. However, the combined magnitude of these tasks creates a challenging responsibility.

KEY FINDINGS

Supply chain project management creates order and predictability among otherwise complex and variable requirements. The tactics, resources and changes that must occur become specific and measurable in advance. Those same tactics organize communications and behaviors along a predictable timeline. Supply chain project management enhances the best of a supply chain professional's skill, including forecasting, soft skills, planning and risk management. This combination builds strategic and advanced management experience and positions the professional for a higher management position and more successful career path.

Successful supply chain project management turns ideas into practical endeavors. For example, a high-level requirement to "merge two software platforms into one" becomes a formal plan that considers strategy in terms of organizational behavior, priorities, risks, resources and visibility. It holds accountable those who must deliver. It helps prevent silos from forming. This enhances the capability of the organization to succeed at complex projects.

Questions for discussion

Has your organization developed a project management strategy that improves weaknesses and makes full use of strengths?

Look at the survey results and determine your areas of strength and weakness. Would you have answered a survey question with a higher or better score than the average? It may be indicative of a strength.

Would you have answered a question with a lower than average score? Work on improvement in this area.

How would you have expected your organization, in general, to answer the same questions? Comparing your organization to the survey results may suggest team and organization-level improvements to consider.
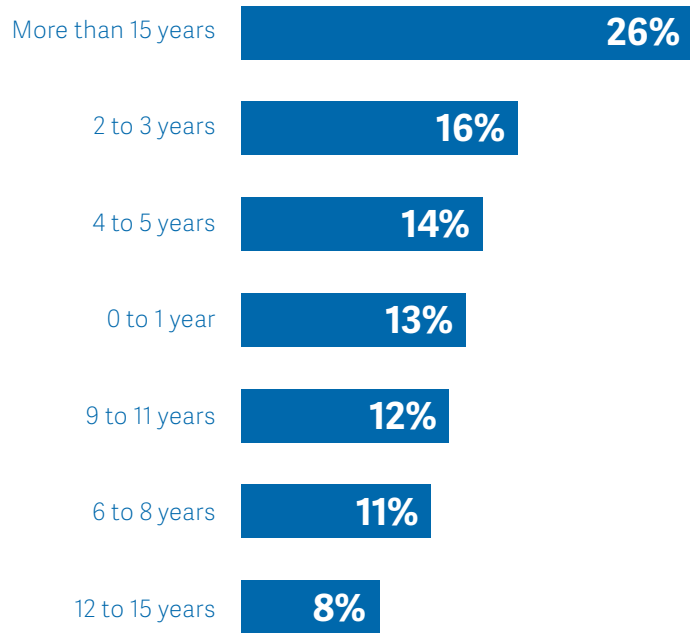
Key topics in supply chain project management

- Survey data points to the continued need for developing great project integration. Technically, a project may meet success metrics on the surface but remain in its own silo—failing to deliver benefits to the wider organization and supply chain. Success metrics should consider how well the project deliverables have become integrated into the sponsoring organization and its supply chain. When integration is successful, future projects can build on past accomplishments rather than reinventing themselves in a new silo. This remains a challenge for a significant number of organizations.

- While practitioners have experience in supply chain project management, levels of formal training or best practices education vary. This suggests that experience gained in an organization with low project management maturity may not be comparable to experience based on actual best practices or the mature practice of supply chain project management. Within a supply chain, project participants may continue to have different expectations.

- Communication and many other soft skills remain integral to supply chain project management, even with improved tools and technologies. Just as a modern supply chain tracks the flow of products, finance and data with technology, human interaction and relationships remain critical. Building trust, expectations and confidence in project plans and forecasts depends primarily on interpersonal skills. Put another way, survey data verifies that supply chain projects are frequently stressful. Stress strikes at a personal level among project team members. Soft skills are necessary for this type of challenge.

Project management best practices

- **Realize** that the resources most critical to successful project completion typically are already heavily loaded with other tasks. This means a supply chain project manager must look for and account for the risk of an overextended resource. The manager must also seek to clearly establish project priority with management should a conflict occur with this resource, as well as define and set realistic alternatives and project expectations should a resource fail to deliver as expected

- **Anticipate** execution challenges with training, skills, tools and practices that support project execution. Execution appears to be the most challenging phase of supply chain project management, so counteract these challenges early.

- **Spend** sufficient time in project initiation and planning to ensure an optimal execution phase. Don't skip tasks and steps in early phases at the cost of later execution that may already be challenging.

- **Respond** to scope creep and budget creep quickly. Excess scope and budget demands appear suddenly, not gradually. This means a professional must keep a constant watch for these pressures and respond to them quickly, protecting the approved project plan. Failure to do so may cause the project or project team to go over budget and out of its scope constraints.

Experience implementing or practicing project management

Respondents were asked how many years of experience they have implementing or practicing project management.

Experience	Percentage
More than 15 years	26%
2 to 3 years	16%
4 to 5 years	14%
0 to 1 year	13%
9 to 11 years	12%
6 to 8 years	11%
12 to 15 years	8%

Project management skills

Respondents were asked if they have participated in a supply chain project that incorporated project management skills within the last 12 months. (Participation examples included enterprise resources planning, implementation and supplier selection.)

75%
Yes

23%
No

3%
Not sure
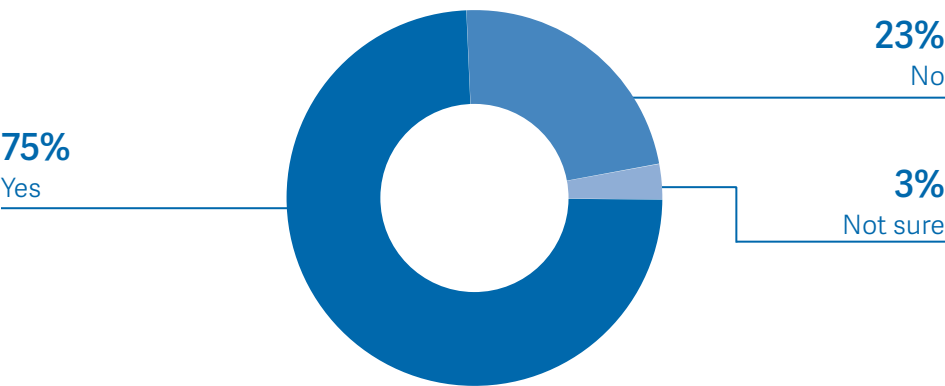
Successfully completed supply chain projects

Respondents were asked what percentage of the time supply chain projects are completed on time, on budget and within scope for their business units.

More than 90%	5%
90%	4%
80%	7%
70%	8%
60%	4%
50%	8%
40%	0
30%	3%
20%	1%
10%	1%
Fewer than 10%	2%
We have not carried out any supply chain projects	15%
I don't know	42%
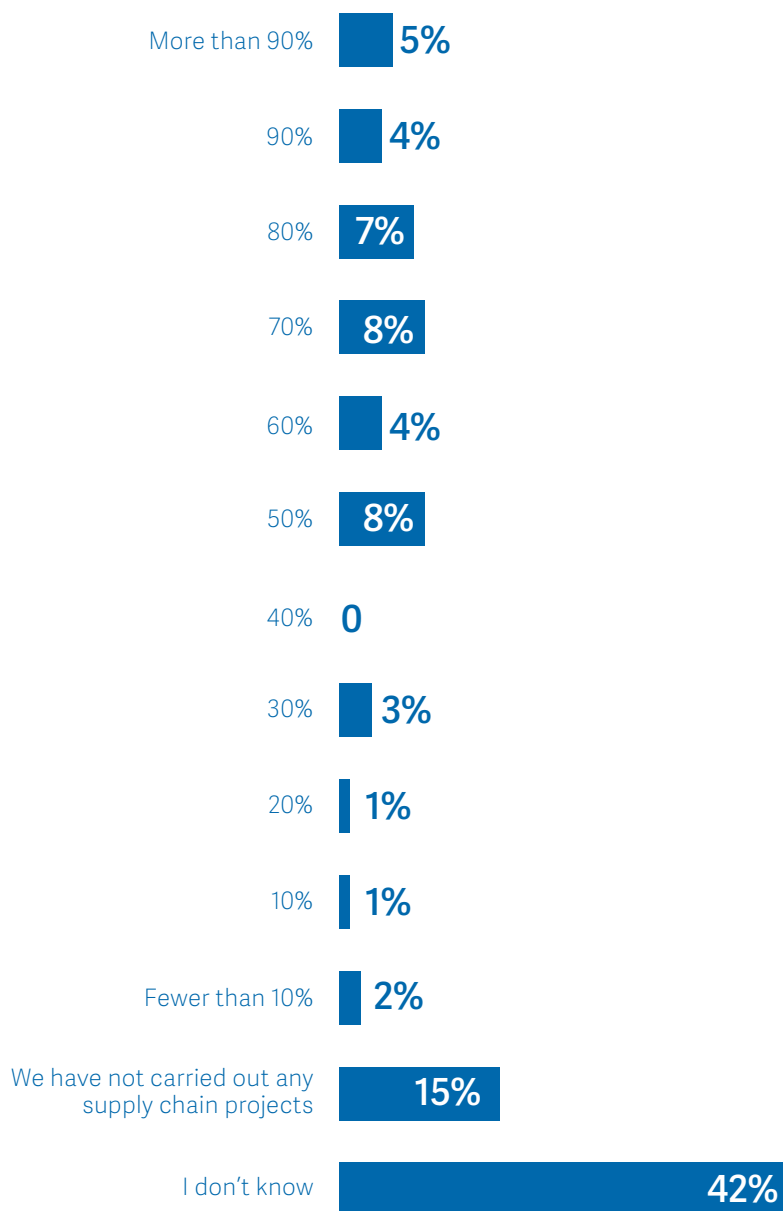
Future supply chain projects

Respondents were asked if their organizations plan to undertake or complete any of the following projects over the next three years.

New product or new process development or launch	48%
Enterprise resource planning (ERP, material requirements planning (MRP) or other major information systems implementation	39%
Adding or changing key suppliers, distributors or other supply chain partners	37%
Don't know	28%
Implement supply chain initiatives such as supply chain sustainability, risk or new market efforts	26%

Businesses with supply chain project manager

Respondents were asked if their departments or business units have a full-time supply chain project manager.

28%
Yes

10%
Not sure

6%
Only when major supply chain projects are underway

56%
No
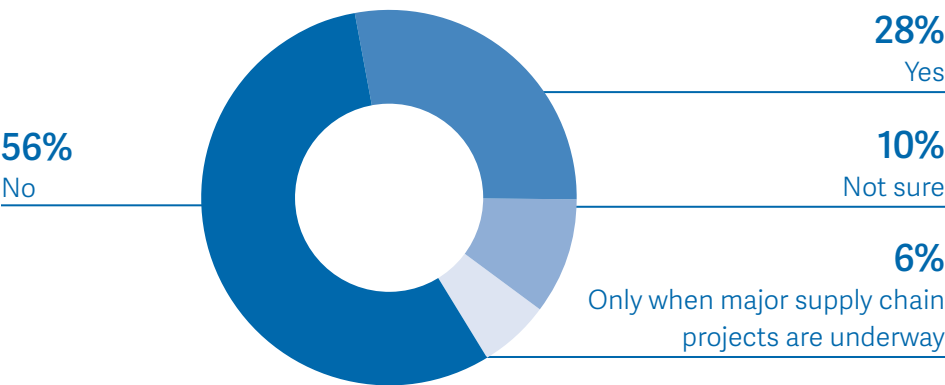
Experience with supply chain projects

Respondents were asked if those who serve on supply chain projects tend to experience any of the following.

32%
Team building efforts among project managers

27%
Project management training

43%
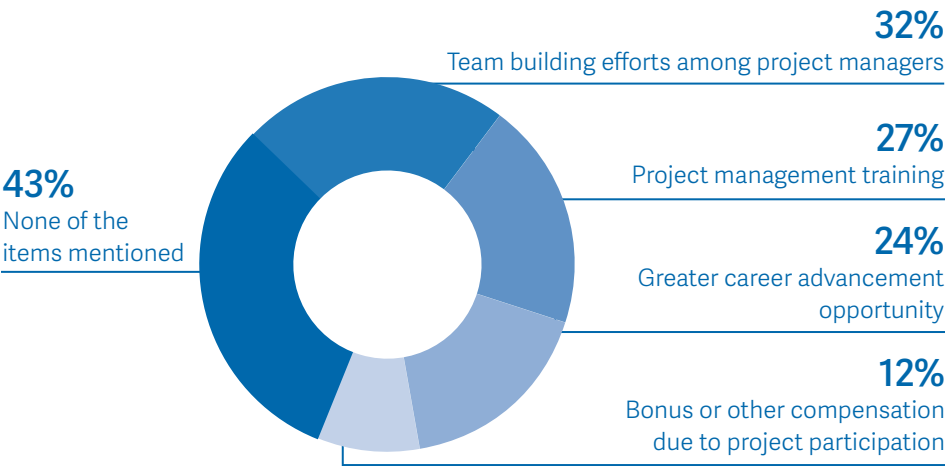None of the items mentioned

24%
Greater career advancement opportunity

12%
Bonus or other compensation due to project participation

Formal recognition of completed major supply chain projects

Respondents were asked if, in general, their teams or business units formally recognize completion of major supply chain projects.

28%
I don't know

28%
Yes, but only on occasion and only for the largest supply chain projects

18%
Yes

27%
No
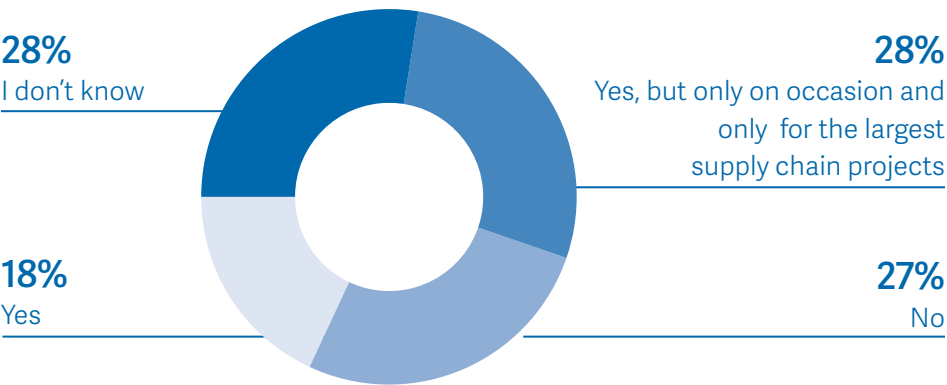
Amount of stress correlated with one's role in supply chain projects

Respondents were asked how stressful their roles in supply chain projects are.

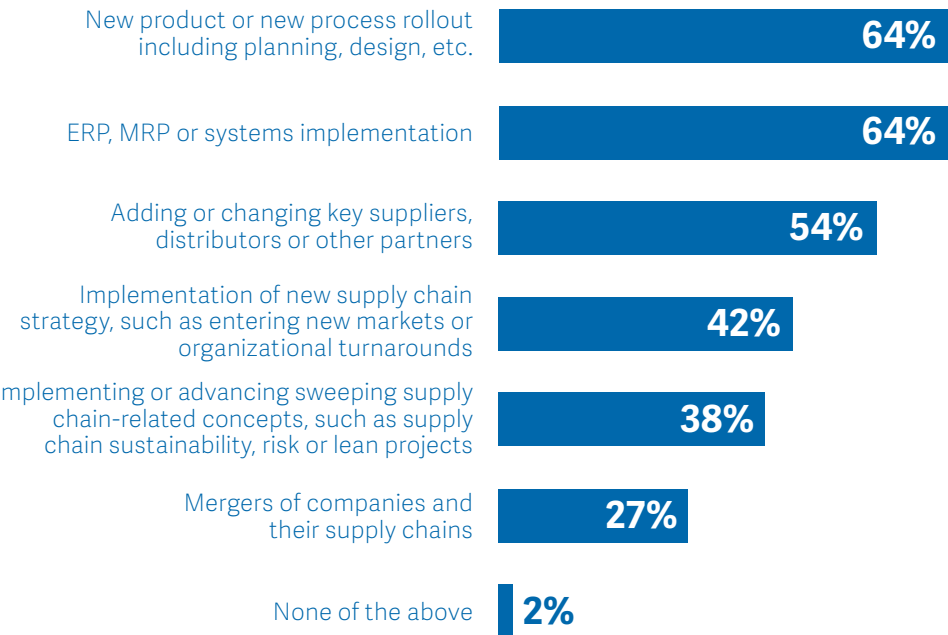| No stress	2	3	4	5	6	7	8	9	Extreme stress	N/A
0	1%	5%	6%	13%	14%	29%	21%	6%	5%	1%

Supply chain project involvement

Respondents were asked in which of the following supply chain projects they have been involved in the past three years.

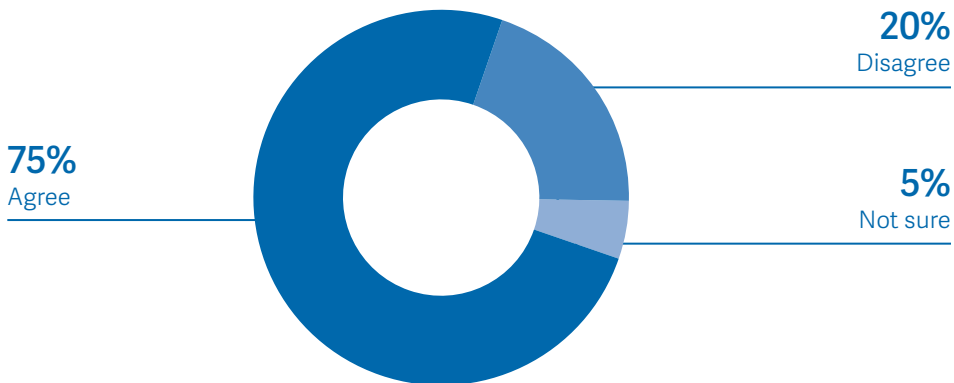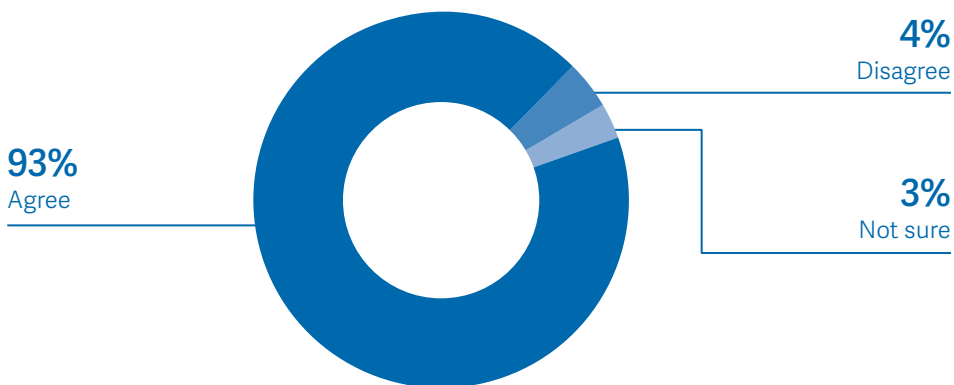| Project	
New product or new process rollout including planning, design, etc.	64%
ERP, MRP or systems implementation	64%
Adding or changing key suppliers, distributors or other partners	54%
Implementation of new supply chain strategy, such as entering new markets or organizational turnarounds	42%
Implementing or advancing sweeping supply chain-related concepts, such as supply chain sustainability, risk or lean projects	38%
Mergers of companies and their supply chains	27%
None of the above	2%

Project management tasks

Respondents were asked to evaluate their experiences regarding suggested project management tasks by indicating the extent to which they identified with the following statements.

1. Experience with Project Management Tasks

Watch project budget and scope carefully every day. Excess budget demands and scope creep increase quickly, not gradually.

20%
Disagree

75%
Agree

5%
Not sure

Be ready for sudden resource constraints; for example, a key team player leaves, a natural disaster occurs or a vendor fails without warning. (Often those who perform the most critical tasks are already heavily tasked and risk causing sudden delay or failure.)

4%
Disagree

93%
Agree

3%
Not sure

Project estimates and forecasts are never 100 percent accurate. Don't bet against inaccuracy in your estimates and forecasts. Manage risk every day, week or month as needed.

97%
Agree

2%
Disagree

2%
Not sure

Spend time and effort on team building. This is money well spent when you consider the alternative to the project.

91%
Agree

4%
Disagree

5%
Not sure

Manage your supply chain projects to enable a smooth handoff to someone else. These projects create visibility and allow easy project turnover if you are pulled off a project and need to hand off the project to another individual.

91%
Agree

5%
Disagree

4%
Not sure

Find or develop a supply chain project management guide or playbook with senior management support. Don't keep reinventing the wheel. Supply chain project procedures, budgeting and organizational project management maturity do not benefit as they should without such a resource.

77%
Agree

12%
Disagree

12%
Not sure

2. Importance of Project Management

Watch project budget and scope carefully every day. Excess budget demands and scope creep increase quickly, not gradually.

43%
Important

43%
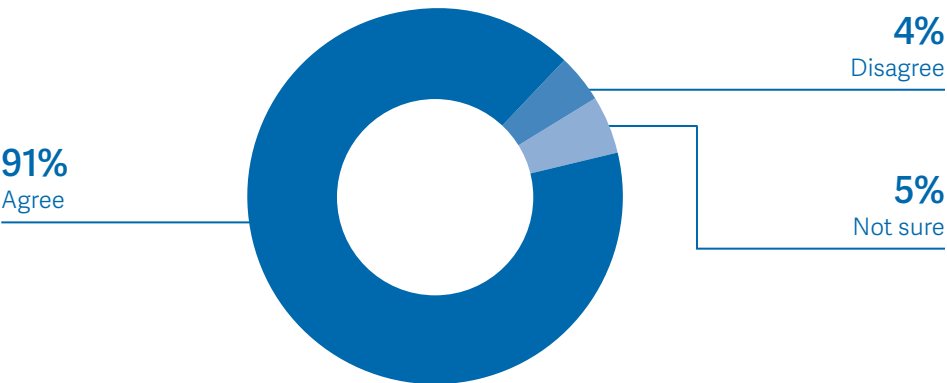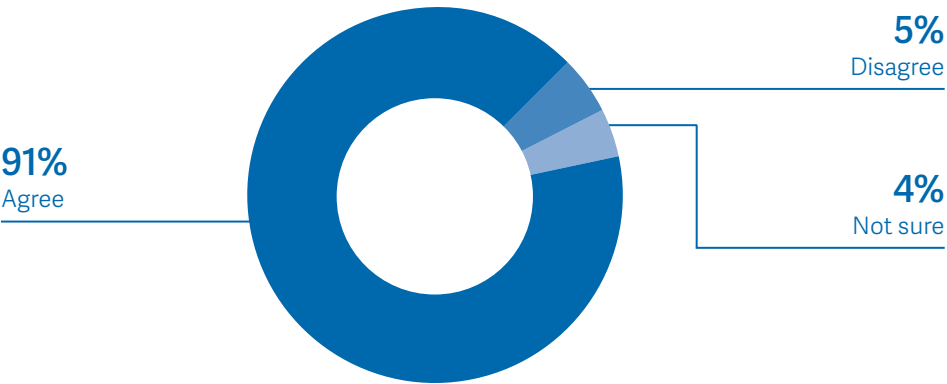Very important

14%
Somewhat important

Be ready for sudden resource constraints; for example, a key team player leaves, a natural disaster occurs or a vendor fails without warning. (Often those who perform the most critical tasks are already heavily tasked and risk causing sudden delay or failure.)

36%
Important

52%
Very important

12%
Somewhat important

Project estimates and forecasts are never 100 percent accurate. Don't bet against inaccuracy in your estimates and forecasts. Manage risk every day, week or month as needed.
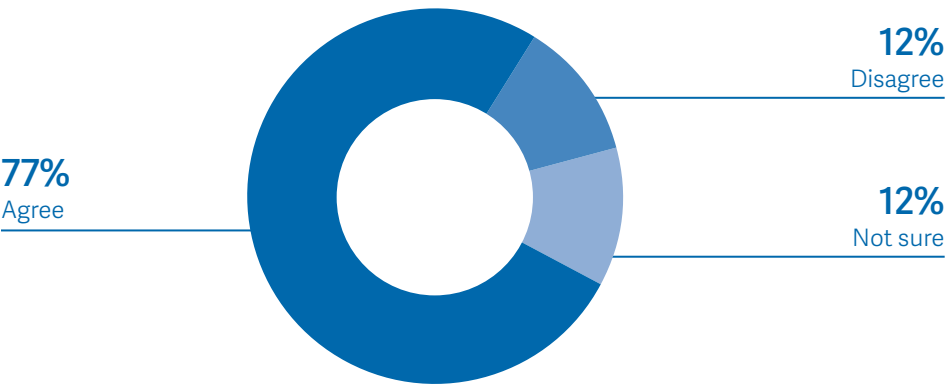
48%
Important

41%
Very important

12%
Somewhat important

Spend time and effort on team building. This is money well spent when you consider the alternative to the project.

33%
Important

38%
Very important

28%
Somewhat important

2%
Not important

Manage your supply chain projects to enable a smooth handoff to someone else. These projects create visibility and allow easy project turnover if you are pulled off a project and need to hand off the project to another individual.
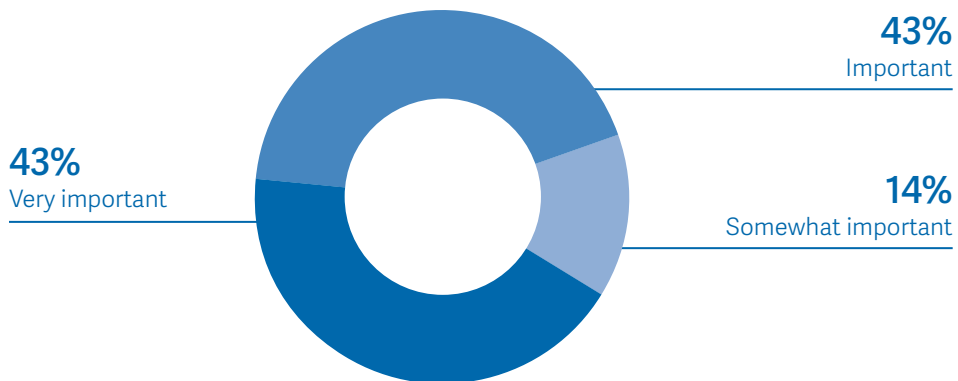
32%
Very important

37%
Important

30%
Somewhat important

2%
Not important

Find or develop a supply chain project management guide or playbook with senior management support. Don't keep reinventing the wheel. Supply chain project procedures, budgeting and organizational project management maturity don't benefit as they should without such a resource.
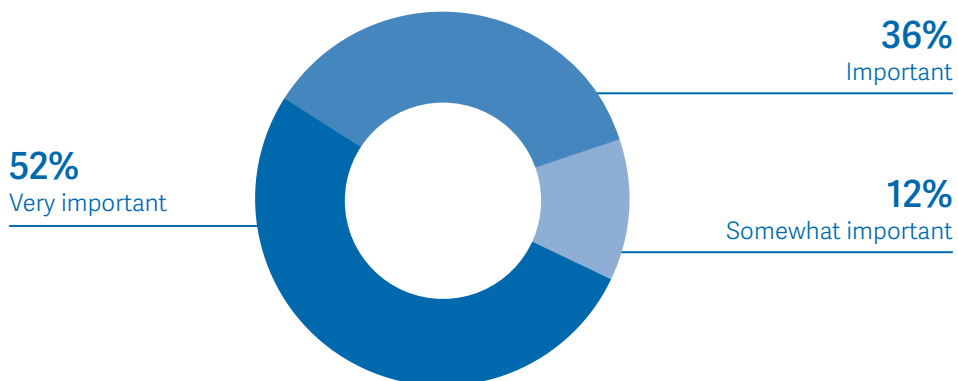
28%
Very important

36%
Important

31%
Somewhat important

4%
Somewhat important
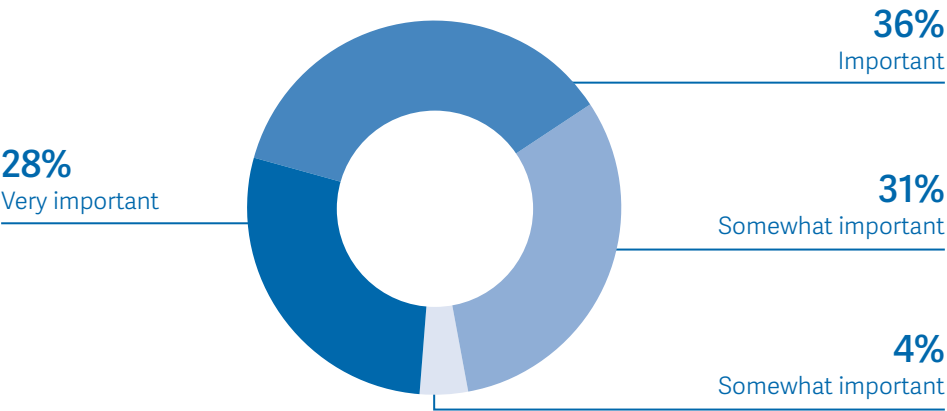
3. Implementation Ease/Difficulty

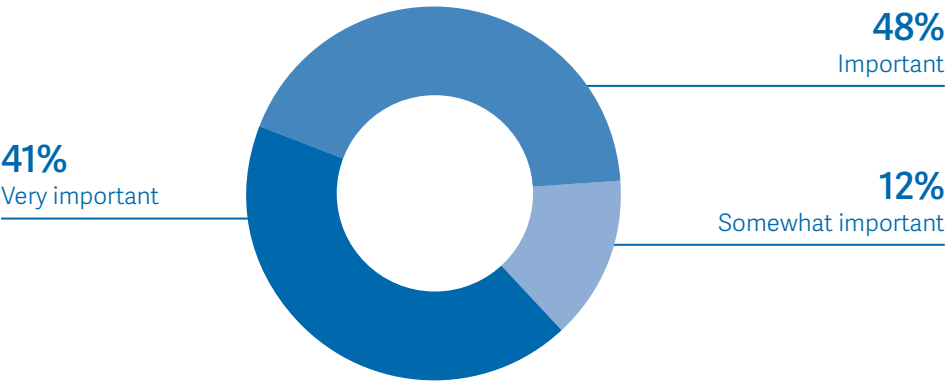Watch project budget and scope carefully every day. Excess budget demands and scope creep increase quickly, not gradually.
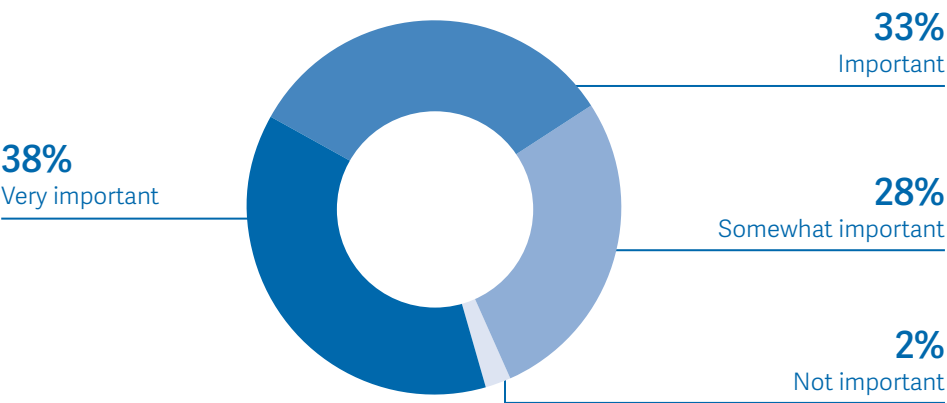
38%
Difficult

6%
Easy

56%
Moderate

Be ready for sudden resource constraints; for example, a key team player leaves, a natural disaster occurs or a vendor fails without warning. (Often those who perform the most critical tasks are already heavily tasked and risk causing sudden delay or failure.)

56%
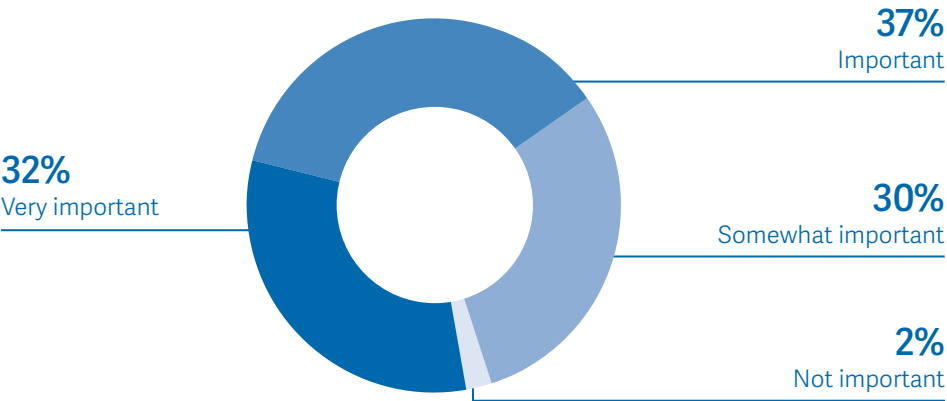Difficult

3%
Easy

40%
Moderate

2%
Not possible

Project estimates and forecasts are never 100 percent accurate. Don't bet against inaccuracy in your estimates and forecasts. Manage risk every day, week or month as needed.

33%
Difficult

59%
Moderate

7%
Easy

1%
Not possible

Spend time and effort on team building. This is money well spent when you consider the alternative to the project.

15%
Difficult

57%
Moderate

28%
Easy

Manage your supply chain projects to enable a smooth handoff to someone else. These projects create visibility and allow easy project turnover if you are pulled off a project and need to hand off the project to another individual.

34%
Difficult

52%
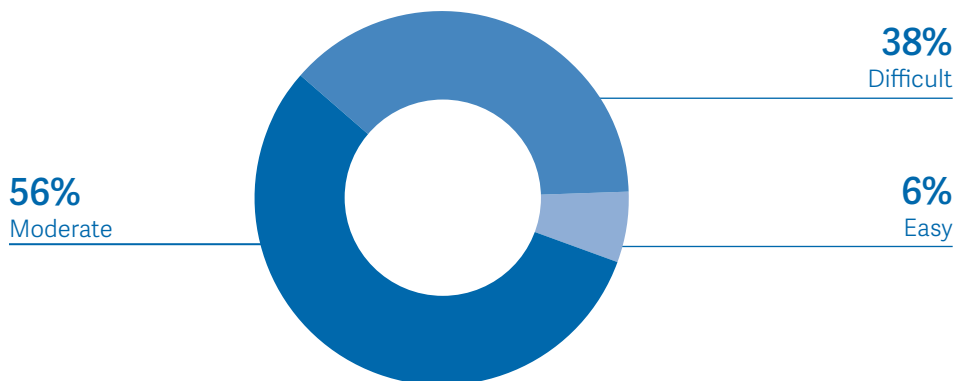Moderate

13%
Easy

1%
Not possible

Find or develop a supply chain project management guide or playbook with senior management support. Don't keep reinventing the wheel. Supply chain project procedures, budgeting and organizational project management maturity do not benefit as they should without such a resource.
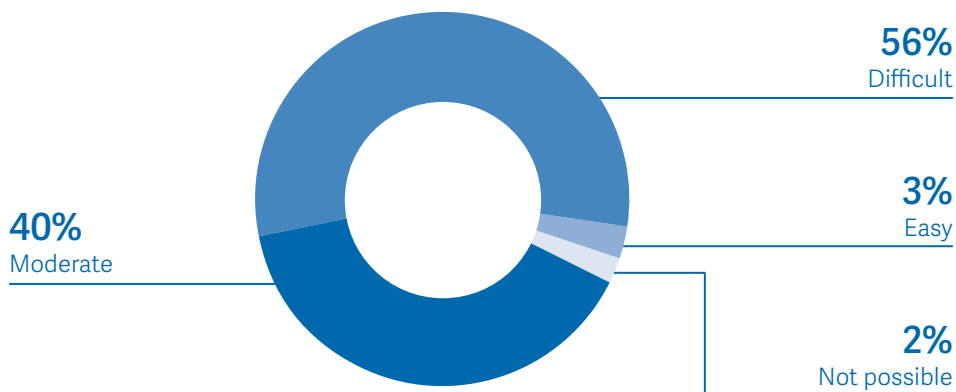
40%
Difficult

48%
Moderate
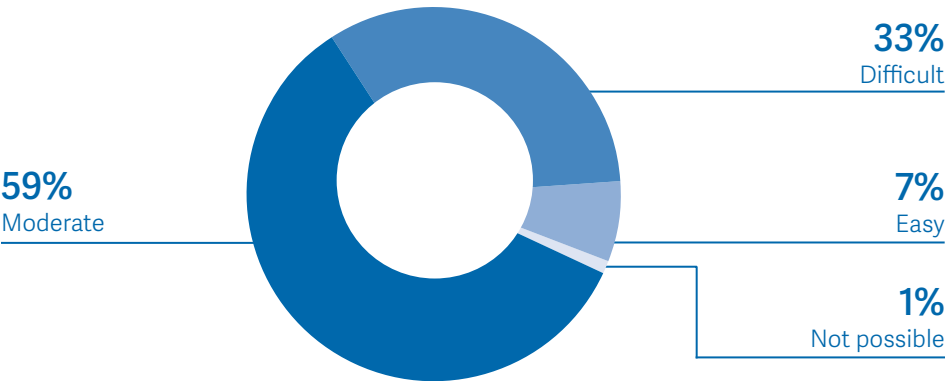
10%
Easy

3%
Not possible

4. Challenging Processes

Respondents were asked, of the five process phases, to rank them in order of which phase is the most challenging to successfully complete.

Initiation

Least challenging	2	3	4	Most challenging
27%	24%	22%	16%	12%

Planning

Least challenging	2	3	4	Most challenging
3%	17%	26%	29%	25%

Execution

Least challenging	2	3	4	Most challenging
1%	5%	3%	35%	36%

Monitoring and Control

Least challenging	2	3	4	Most challenging
1%	14%	35%	36%	13%

Closing

Least challenging	2	3	4	Most challenging
29%	20%	25%	17%	10%

How project management skills are acquired

Respondents were asked how people in their organizations acquire supply chain project management skills.

Experience through on-the-job project management	84%
Hiring people who are already experienced in project management	57%
Project management education or courses	55%
Training on project management tools, software or systems	45%
Project management certification	34%
None of the above	3%
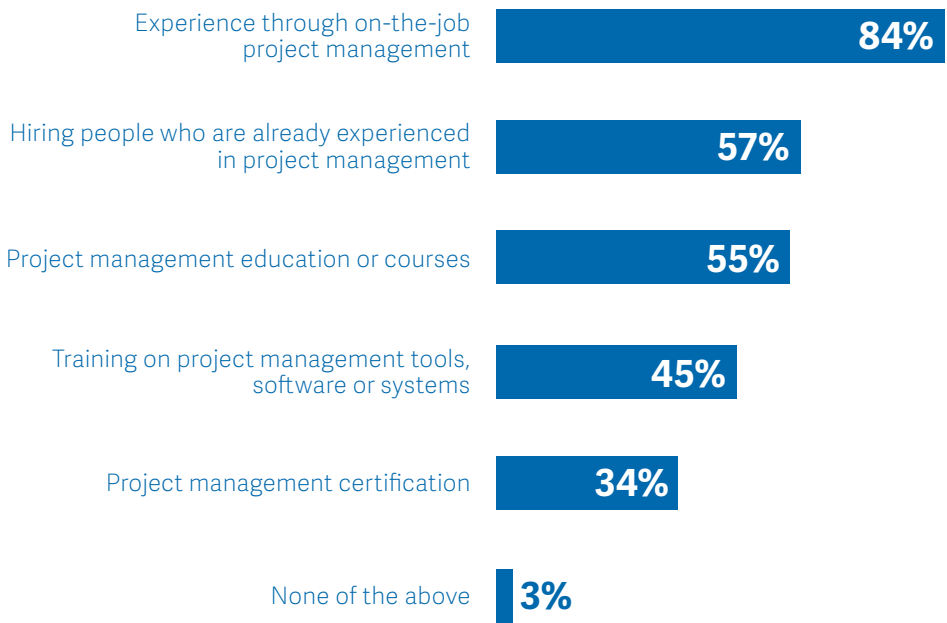
RESPONDENT PROFILE

Survey respondents are fairly evenly represented in years of experience in project management.

>1/2

of respondents reported they do not have a department or business unit with a full-time supply chain project manager. Ten percent are unsure if they do or not.

7.5 of every 10 employees

indicated they have participated in a supply chain project that incorporated project management within the last 12 months
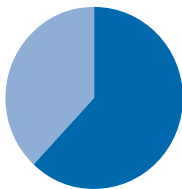
62% of respondents indicated significant stress in their role in a supply chain project.

12,500

members and customers were invited by APICS to participate in the survey in November 2012. The survey results reflect an approximate 5 percent margin of error at a 95 percent confidence level.

84%

of respondents said their organization helps employees acquire supply chain project management skills through on-the-job project management experience, while 57 percent of organizations hire people who are already experienced in project management .

~22%

of respondents work at organizations that employ between 100 and 499 employees, and 17 percent of respondents work at organizations with 25,000or more employees.

Number of employees in company

Respondents were asked how many employees their company has.

Category	Percentage
25,000 or more	18%
10,000 to 24,999	9%
5,000 to 9,999	8%
2,500 to 4,999	7%
1,000 to 2,499	10%
500 to 999	8%
250 to 499	11%
100 to 249	11%
25 to 99	8%
Fewer than 25	8%
Don't know	1%
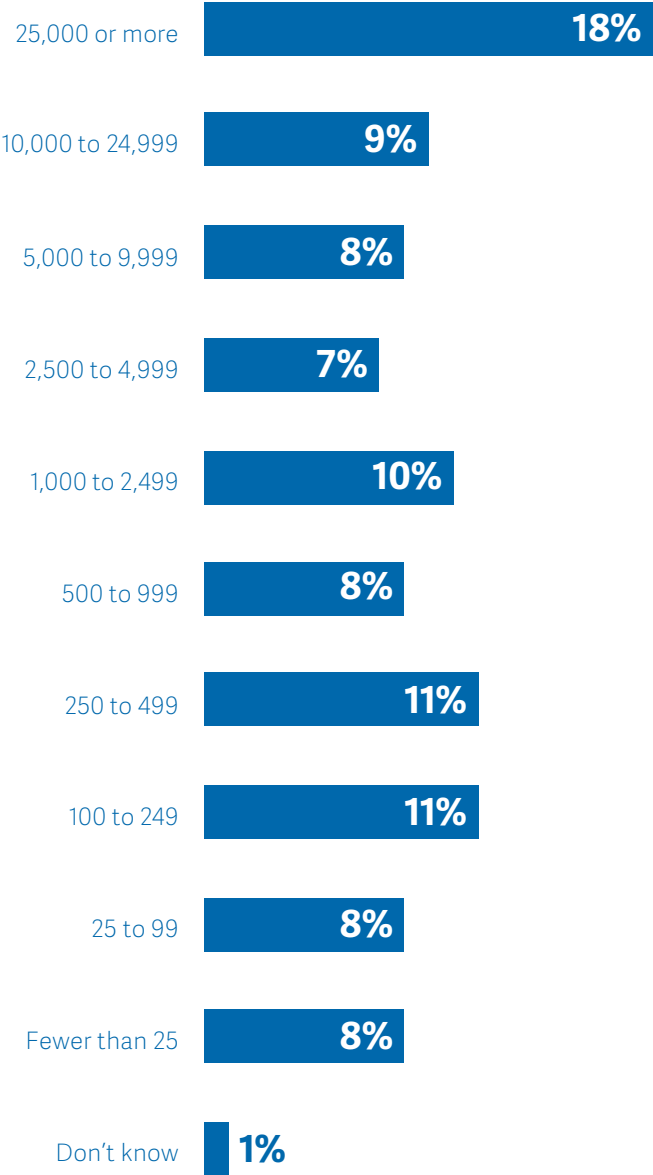
STRENGTHENING PROJECT MANAGEMENT

Multifaceted project management is required to ensure that a defined supply chain task is completed on time, within budget and within scope. The need for strong project management seems relatively straightforward. Yet APICS SCC research shows that it remains surprisingly neglected as a specific function in many organizations.

This report will help you determine if your organization has an effective project management culture. You can enable project management success at your organization by gaining an understanding of:

- How project management can help achieve strategic goals

- Typical project management pitfalls and how to avoid them

- Best practices that will maximize the impact of project management

- How to use project management to break down silos

Enhancing project management

Every organization has strategic goals it wants to achieve, while simultaneously facing changes in its competitive environment. One of the most powerful tools to use in reaching those goals is project management. Put simply, project management is a process that enables you to coordinate resources and activities in order to deliver a defined goal within a set timeframe, budget and scope. A project can range from a simple change made over a few days that impacts only a single team, to a massive effort that takes a year or more and touches every function in an organization. Essentially, any time you step outside of your standard business process, you should be engaging in project management.

While there is not a specific discipline of supply chain project management, it may be the most important functional area for effective use of project management skills. Perhaps more than any other functional area, the supply chain interacts with multiple partners both inside and outside the organization, while the demands on supply chain remain complex and vary frequently. Project management can help in defining what the real goals are and how to get there.

Project management questions to consider at your organization

> **How can your organization properly support project management?**

> **What are the common failures in project management, and how can they be avoided?**

> **What best practices can your organization use in order to get the most out of project management?**

Is your organization focused on project management?

Despite the value of strong project management, it remains a low priority at many organizations. There may be no formal project management team, so already-busy employees may be expected to handle project management in addition to their other responsibilities. Project outcomes—even successful ones—are often poorly communicated throughout the organization. Project managers may flounder when they don't have a high level of support from management.

Ask yourself these questions to determine if your organization is working to develop an effective project management culture:

- **Have you dedicated a full-time resource as a project manager?** It is difficult for people to properly focus on the many tasks required to manage a project when their daily role in the organization requires all of their attention. Give individuals the resources and time allotment they need to focus on project success.

- **If you have several projects underway simultaneously, have you established a project management office (PMO)?** A PMO can help in developing best practices and standards across projects for all project managers. Ideally, this team can be a driver of organizational excellence across all functions.

- **Do you publicize outcomes?** Frequently, a project will be completed, and affected groups will never be notified of the change. This can result in employees continuing to perform non-value-added activities. Make sure people know about project completion and successes; these may help serve as a model for future project management endeavors.

- **Have you identified a project champion?** People frequently find change threatening, even though it may end up making their jobs easier. A project manager faced with opposition needs visible support from executives in order to push changes through. Without support, the project may be weighted down by office politics.

Project management and strategic roles

Every organization has an overall strategy or a vision of where it wants to be in the future. But those strategic goals are easily forgotten in the day-to-day struggles of running an organization. Project management is an excellent way of keeping focus on high-level strategy.

- The nature of project management is delivering transformative changes that alter how tasks are completed. It is designed to make those involved take a step back from the daily standard procedures and look at how to change them for the better.

- Project management is a great way to help bridge the gap between different functional areas and to break down silos. Since the project manager is not part of any one group, he or she can avoid being snared in political issues between teams.

- Project management can also help organizations to avoid another side effect of silos—duplication of effort. By working as an integrator across teams, the project manager can help reduce the number of overlapping initiatives in favor of a single best practice initiative.

When used effectively, project management can be a powerful way to put your strategic goals into practice. Let project management help you make those goals a reality.

Project management and supply chain

Supply chain project management creates order and predictability around otherwise complex and variable requirements. The tactics, resources and changes become specific and measurable in advance. Those same tactics organize communications and behaviors along a predictable timeline. Supply chain project management enhances the best of a supply chain professional's skill, including forecasting, soft skills, planning and risk management. This combination builds strategic and advanced management experience and positions professionals for higher management positions and successful career paths.

Successful supply chain project management turns ideas into practical endeavors. For example, a high-level requirement to "merge two software platforms into one" becomes a formal plan that considers strategy in terms of organizational behavior, priorities, risks, resources and visibility. It holds accountable those who must deliver. It helps prevent silos from forming. This enhances the capability of the organization to succeed at complex projects.

Project management pitfalls and best practices

It is all too common for a project to fail and create serious consequences for an organization. Even if a project does not fail completely, it may not achieve the original goals it was designed to deliver. However, if you follow some best practices throughout the life cycle of the project, you can avoid certain pitfalls.

A project is usually described as having a five-stage life cycle. Each of the phases is important, and each has its own failure points:

1. Conception and Initiation

The broad concept of the project is defined. A decision to further pursue the project is made if it will benefit the organization. An executive is chosen to act as project sponsor.

- **Pitfall:** Projects that are clearly unrealistic should not be pursued further, at least until conditions or requirements change.

- **Best Practice:** Although formal resource requirements are not yet defined, there should be at least a high-level understanding of how much work the project will entail. Consider the following questions: are there clear benefits of the project? Is the project in alignment with strategic goals?

2. Definition and Planning

The project is formally defined and a charter, scope and project plan are created. A budget and schedule are made and the project's personnel are assigned.

- **Pitfall:** Leaving requirements undefined and assumptions not spelled out can be a recipe for disaster.

- **Best practice:** The supporting documentation must be as specific as possible. Make sure it is completely clear what a successful outcome will look like.

- **Pitfall:** It is easy to miss a task requirement if it is not spelled out on the plan.

- **Best practice:** Make sure your project plan includes all project tasks and properly defines dependencies.

3. Execution

The project is formally started and people work to complete their tasks. This phase is generally the longest, because it is where the primary tasks are completed.

- **Pitfall:** A missed requirement can result in a cascade of issues impacting other team members.

- **Best practice:** Team resources need to complete their tasks in alignment with the requirements and dates defined in the planning phase.

- **Pitfall:** An inaccurate estimation of required work in the planning phase may become evident here if individuals are overcommitted.

- **Best practice:** Team members should be monitored to make sure they aren't pulled in to work on unrelated projects.

4. Monitor and Control

This phase happens in conjunction with the execution phase. The program manager monitors progress, and how inputs and required outputs are on schedule relative to goals. Ongoing communication between resources is important to avoid getting off track.

- **Pitfall:** If someone is not aware that his or her task due date has been moved up, that task may not be completed in time, which could in turn affect other task completion that depends on it.

- **Best practice:** Ensure that everyone on the team is aware of the current progress and any changes to goals or requirements are effectively communicated.

- **Pitfall:** It is easy to allow close progress monitoring to slide, especially when a task seems to be moving forward as planned; but issues can arise surprisingly quickly and catch-up work often tends to be lower quality.

- **Best Practice:** Make sure that all critical tasks are continually monitored for expected progress.

5. Close

This phase includes any post-implementation support and a final evaluation of project success. At this point, a lessons-learned document can be created to help develop future best practices.

- **Pitfall:** Some projects may need ongoing support after they are formally launched.

- **Best Practice:** Make sure that the project is not forgotten about as soon as it has gone live.

- **Pitfall:** Mistakes were almost certainly made during project implementation.

- **Best Practice:** Take time to fully document these mistakes and identify ways to avoid them in the future. Make sure the document is part of a formal best practices plan that is communicated to relevant team members.

A final pitfall that can happen at any point in the project is a change in requirements, with the assumption that it will not impact the project. Organizational leaders typically want a project delivered on time, on budget, with the agreed scope, and of high quality. If one of those targets changes, it will impact one or more of the others. For example, if the budget is cut, the project may take longer, deliver less, or be of lower quality.

A best practice is that good project management will enable you to identify these risks and will ensure that management is aware of the effects its changes will cause.

Tip: Being prepared is your best defense.

Being a successful project manager

Avoiding typical pitfalls is an excellent start for a project manager, but it's not enough to be truly effective. What are some best practices for a project manager to make the most of his or her role in an organization?

- **Embrace and implement lessons learned.** Part of the closing phase of the project should be a lessons-learned document. But it is all too easy to ignore those lessons, which results in the same mistakes being made again and again. Don't make every project your first project; learn from the past. If those mistakes were because of organizational culture, make sure to approach executives about making changes.

- **Push to make project guidelines and outcomes realistic.** There will always be pressure to deliver projects faster, cheaper and better. But a project doesn't benefit anyone if it fails at one or more of its goals. Work with the management sponsor to develop goals that can realistically be achieved. A reputation for honest, accurate assessment of what can be accomplished will go a long way in preventing being asked to deliver the impossible.

- **Good communication helps prevent problems.** Good communication is vital to keeping a project on track and supported by all involved. While you don't want to overwhelm people with minutiae, you do want the project resources and the project sponsor to know the current status and next steps. Reminding people of their responsibilities helps prevent missed tasks.

- **Work on your soft skills.** Project management does involve some number crunching and technical know-how, but much of it is working with people. Remember that skillfully interacting with your team resources—as well as helping them work well together—is critical to getting tasks completed. Gain people's support by supporting them and helping to resolve their issues.

- **Be flexible.** It is almost inevitable that something will happen to throw a wrench in your project plan. If possible, identify likely points of failure and have contingency plans in place. Think about ways tasks could be done at the same time (for example, two unrelated software functions could be worked on by different developers at the same time). Another risk might be if a precursor task is not completed on time. Could additional resources be brought into assist? Be willing to think outside the box to achieve your goals.

- **Consider formal training to build your abilities.** Many project managers are self-trained, with no formal education in the field. There is great value in learning by experience–nothing can replace the hands-on knowledge gained from having worked in operations. However, outside training can help you

think more strategically. It can also help with those parts of project management that are farthest from operational work, such as the definition or planning phase. Think about taking training courses such as those that support the Project Management Professional (PMP) certification offered by the Project Management Institute.

The future of project management

Today there are more project management software tools available than ever before. Project managers have a wealth of tools at their disposal, from time and budget trackers to collaborative document systems to critical path schedulers.

Some have even theorized that automated software tools could one day eliminate the role of the project manager by scheduling tasks without any human interaction. However, given the vital importance of human interaction and creative responses to crises, it is difficult to see how a fully automated solution could handle any but the smallest projects. The project manager's soft skills will continue to be necessary in order to give people the support they need to enable successful project deliverables.

The role of project management will only become more important to the success of organizations in the future. As supply chains become more complex, managing the links between organizations becomes more important. At the same time, breaking down silos means internal projects are more likely to impact every part of the organization. Make sure your organization achieves strategic success by following the tips and practices discussed here.

The APICS Operations Management Body of Knowledge (OMBOK) framework, third edition, describes project management as using skills and knowledge for organizing, planning, scheduling, directing, controlling, monitoring and evaluating the prescribed activities needed to complete a large-scale task. Before a project starts, senior management decides how the project will be organized. There are three basic approaches:

- **Pure project.** In pure project approaches, a self-contained team works on the project full time.

- **Functional project.** A functional project is housed within a functional division of the firm, and specialized function-area experts work on the project.

- **Matrix project.** A matrix project blends properties of pure and functional project structures. Each project uses people from different functional areas. The project manager coordinates activities of the project while working closely with functional managers.

PERSPECTIVES
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BEYOND THE FINISH LINE
Best practices for post-implementation management of megaprojects

By Tim Becker

In the last installment of "Executive View," I focused on the initial setup of large transformational programs. I addressed the various elements of program structure, including charter, governance and organization, scope, work planning, budget, the business case and reporting.

Adopting best practices in these areas is a prudent investment to ensure the success of megaprojects. But even the best-structured and best-launched programs can run aground because of poor steering by program managers. Now, I will discuss some best-of-the-best practices to keep a megaproject on course.

Establish a program management office (PMO). One of the most important ways to keep megaprojects on course is to implement disciplined program management. Large transformational programs are, in essence, sets of many interlocking projects. Thus, one best practice is to establish a PMO, which centralizes functions where consolidation is more efficient or absolutely necessary—for example, in financial accounting and reporting.

A PMO standardizes processes across projects, catalyzes the adoption of best practices and realizes economies of scale. It also consolidates reporting, rolls up finances and tracks key risks. PMOs maintain a project's foundational documents, including charter, business case, and documents establishing organization and governance.

Avoid expediency and complacency. Managers must be careful not to let program management become a routine exercise. While many megaprojects begin with good intentions to maintain rigorous project management, expediency sometimes drives managers to cut corners. Other times, the long grind leads to a gradual neglect of project discipline.

Whether intentional or not, the results are the same. Risks are handled in perfunctory fashion. Foundational documents are not updated.Reporting becomes sloppy, uninformative and inconsistent. This gradual slide into a "tick-the-box" approach can cause a program to veer, sometimes imperceptibly, toward failure. Accordingly, the PMO must be vigilant about maintaining program discipline against the lure of the twin sins of expediency and complacency.

Prevent silos from forming. Another important—but difficult—program management function is maintaining integration of the overall program. Integration must occur not only on the inside (among the various interlocking projects), but also with the broader organization on the outside, which often is more concerned with "business as usual." The biggest danger comes from the silo effect: Individual units of a program focus so much on accomplishing

While many megaprojects begin with good intentions to maintain rigorous project management, expediency sometimes drives managers to cut corners. Other times, the long grind leads to a gradual neglect of project discipline.

their specified tasks that they ignore and sometimes oppose the objectives of other projects and of the larger organization.

The PMO plays a crucial role in preventing silos from forming and razing them when they occur. It accomplishes this by creating interfaces between parallel projects with dependencies, sometimes forcefully. Often, all that is required are periodic meetings among managers of dependent projects; but, other times, further intervention is needed. This can include mediated discussions or the inclusion of specific tasks in work plans.

Silos are an important issue with regard to the megaproject's relationship to the larger organization. To the organization concerned with business as usual, large transformational projects are separate, single-purpose entities, due to their significant resource requirements. Organizational resources become devoted entirely to these programs—often, for years. This separation can create suspicion, isolation and arrogance, leading to solutions that are unfit or not accepted by the organization.

There are a number of ways to mitigate program silos. Consider a regular rotation of resources into the program from the organization, at least for certain positions. Any rotation should be balanced by maintaining continuity in resources. During the program's inception, all parties should agree to acceptance criteria for program deliverables to be transitioned to the organization—for example, solutions, functions and processes. Perform frequent and ongoing reviews of program deliverables. This includes representation by the organization in the program's governance, including a role on the steering committee.

Managing megaprojects can feel like sprinting a marathon.

Make risk management the highest priority. The PMO is the central repository for tracking risks. In this context, risks are threats to the schedule, budget, solution or quality. All risks contain both a magnitude—such as a delay of some number of weeks—and a probability of occurring. The PMO must ensure that risk reporting is substantive. All risks should be well described, quantify both magnitude and probability, and contain specific actions and associated dates to mitigate the risks.

Risk management is perhaps the most important aspect of project management. Fortunately, there are easily calculable metrics that can shine a bright light on the endeavor. Following are examples of questions that should be asked and answered:

- What percentage of project delays, budget overages, or degradations in solution quality result from risks that were not identified until they occurred?

- For risks identified before they became manifest, how accurate were the initial (and subsequent) impact estimates, and how far in advance were the risks recognized?

- For the sum total of acknowledged risks, how accurate were the initial (and revised) probability estimates?

The best projects leave few risks unidentified, spot risks far in advance of their potential manifestation, and estimate potential impacts and probabilities with accuracy. They also have carefully thought-out mitigation strategies and a contingency plan for the worst-case scenario failure of a major program component.

Plan the transition. Managing megaprojects can feel like sprinting a marathon. The exhaustion often causes program managers to give little consideration to the crucial task of transitioning solutions and processes to the organization. Program managers must take care not to prematurely demobilize projects. To ensure a smooth transition, consider the following steps.

First, establish metrics and reporting systems to track operational readiness of the transition to the business. This includes working with leadership to develop acceptance criteria for final program deliverables.

Second, implement a trial period of about 60 to 90 days before making the transfer. This allows time to work out any kinks. During the trial period, staff involved in the project should work directly with the business, resisting the temptation to merely use documentation. Specifically, make efforts to

- define operational metrics

- designate internal entities and outside suppliers to handle various problems, such as the post-implementation organization structure

- establish procedures for second and third-tier support functions

- enact mechanisms such as service level agreements to support the business-as-usual operating model.

Third, during the post-transition phase, designate a period of around four to six months of enhanced support. While this entails a longer and more costly deployment, ultimately, it will result in higher quality and better acceptance of the transformation.

Conduct independent reviews. Implementation of the preceding best practices will keep your megaproject headed toward success. However, it does not obviate the need for independent oversight. Accordingly, schedule periodic audits of the project by external parties with no direct stake in the project. After all, even the best-run programs can benefit from ongoing review.

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A NEW PLAN FOR YOUR NEW PRODUCTS

Strategies for proactively managing life cycles

By Ferose A. Lambay, CPIM, CSCP

As the life cycles of high-tech products and technology continue to shrink, supply chains experience greater and greater stress. Added strain is placed on inventory management professionals as new products are introduced and those nearing the end of life are discontinued. If not efficiently managed through collaborative business processes, this situation can seriously threaten organizations' competitive positions. To respond to these challenges, a growing number of manufacturers are combining product life cycle management (PLM) with conventional sales and operations planning (S&OP) by enhancing it with analytics in order to reduce the cost and labor involved in new product introductions.

All kinds of information must be transferred quickly across the value chain to ensure new product launches are timely and successful. In addition, the entire process must be reinforced by a strong go-to-market strategy. The timing of these introductions is crucial to ensuring that slow-moving and end-of-life products do not get stranded in the pipeline, thus creating inventory exposure risks and material liabilities among tiered partners in the linked supply chain.

For some companies, this problem actually presents an exciting opportunity: helping to create a competitive edge by using analytics in a hierarchy (enterprise, departments, and functional areas). Supply chain analytics has become the preferred route to an improved ability to anticipate, forecast and manage new market trends—resulting in a coherent organizational strategy that leads to better batch sizes, economic order quantities (EOQs), minimum order quantities (MOQs), lead times, ability to predict when to introduce new products, and knowing when to retire products with declining demand while minimizing stock returns.

With such a vast array of variables to manage, the task appears formidable. But the complexity is manageable by combining PLM with enhanced S&OP to simplify complicated matters for engineering, sales, marketing, product management, operations, purchasing and logistics. (See Figure 1.) By reengineering traditional S&OP, old products at a crossroads in their life cycles can be easily transitioned, introducing new products with much less risk. Manufacturing planning cycle times can be reduced sharply once collaboration enables more frequent communication among supply chain partners. Revamped business processes, proactive inventory models and analytics form the essential elements in the enhanced S&OP framework.

Figure 1: PLM combined with enhanced S&OP

Sales	Product marketing	New product introduction
Customer forecasts		Outsourced manufacturing
Customer orders/quotes	Demand fulfillment	New customers
	Sales and operations planning	Supply and capacity management
	Publish single number game plan	
	Master production schedule	
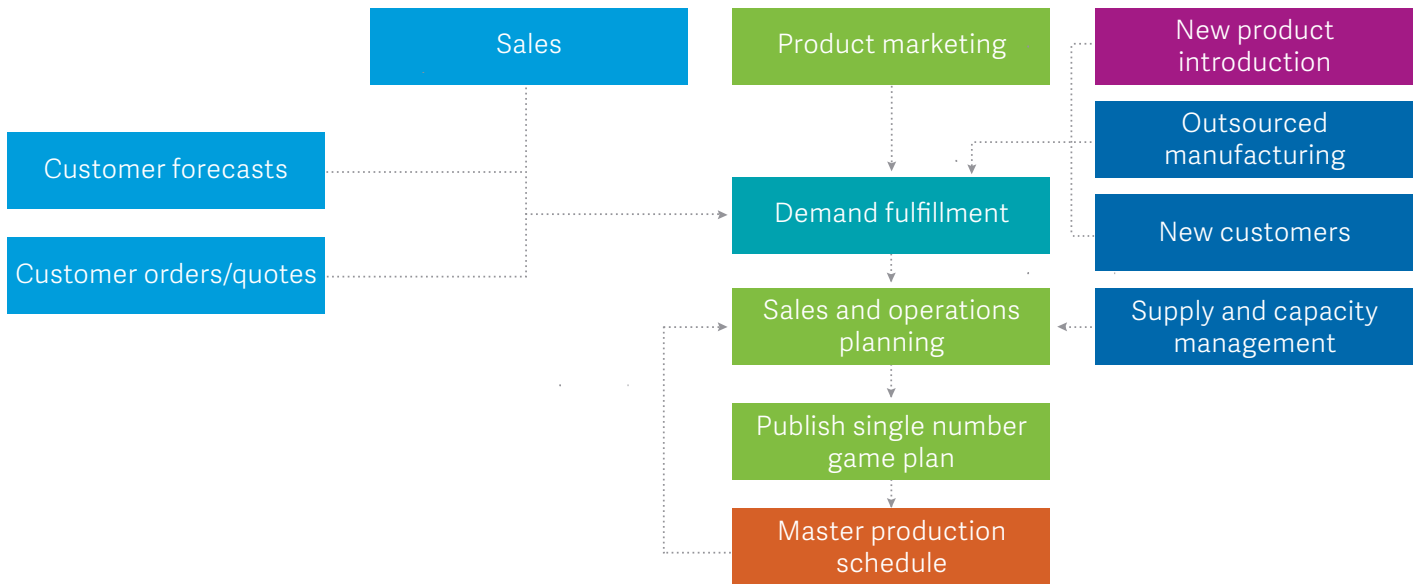
This new model allows for course corrections in financial budgeting, exposing misaligned goals and satisfying customer demand at the lowest total delivered cost. The results are more collaborative business processes among supply chain partners, with the common goal to minimize excess inventory and obsolete products along with residual components in their bills of material.

Using traditional S&OP in high-tech industries is a no-win game because of the varying lead times of suppliers, the complex engineering involved in product lines, and high volatility in demand witnessed by the industry and its customers. However, supply chain analytics can make a significant difference. Analytics begins at the prelaunch stage with sensing product need and extends to shaping product attributes; design; and responding with planning, production, and supply chain management.

Supply chain analytics can keep enterprises a step ahead by identifying demand and supply gaps, flagging inefficiencies, anticipating market behavior, and bringing predictive insights. The transparency this lends helps equip organizations to properly translate historical lag data into leading indicators. New product introductions are facilitated by extracting actionable insights about customer needs. Plus, on the production side, analytics can enable continuous innovation in manufacturing quality. They assist with trimming invisible costs by shortening the complete manufacturing planning cycle in the end-to-end supply chain due to better information sharing.

Analytics in PLM strategy

The high-tech manufacturing industry's latest cost-cutter is its strategy of using analytics to align new products with end-of-life products. The same approach also helps boost margins from inventory reduction every time technology undergoes transformation, thus creating superior products with greater computing power. Reducing variability in the demand planning of active products is still a linear process to some degree. It becomes tricky to forecast new product launches without having access to prior history, using a similar launch as a model, or ramping down products that have reached the end of their product life cycle curves.

Smart business professionals rely on analytics to sense demand signals picked from the consumption side of demand (downstream) as early as possible. By shaping and responding to these signals with finished-goods inventory in a timely manner, overall supply planning, on-time delivery, and sales performance are heightened. Another benefit is that predictive analytics can help trigger exception alerts resulting in an amplified signal or notification. Intelligence is propelled upstream and downstream in the supply chain, mitigating risk at each procurement, manufacturing and shipment node. (See Figure 2.)

Birthing a new high-tech product

New product introductions in high-tech manufacturing surely require a nonlinear process. Parallel research and technological innovation affect the entire supply chain—engineering, marketing, sales, customers, suppliers, manufacturing, storage, distribution channel, transportation, and aftermarket logistics. The key reason for new-product launch failures is the absence of market reaction and responsiveness in supply chain planning. Responsiveness is essential so that new products reach customers in a timely manner and supply chain partners can foresee potential issues and take corrective measures early on—rescheduling or even canceling promised product deliveries in order to preempt potential failure and curtail inventory in the pipeline, the shop floor, and warehouses.

End-of life transitioning is not an easy task, as high-tech products and components always are in a state of flux. Server platforms, operating systems, software, assembly components, and various quality standards (ISO 9001, TL 9000, Network Equipment-Building System, and the like) all play a significant role. In addition, the high-tech industry frequently witnesses innovationsand changes, such as swings in chip size and capacity, flash memory, and more.

Figure 2: Four-stage S&OP process maturity model

MARGINAL PROCESS

Informal meetings
- Sporadic scheduling

Disjointed processes
- Separate demand plans
- Supply plans unaligned with demand plans

Minimal technology use
- Mostly spreadsheets

RUDIMENTARY PROCESS

Formal meetings
- Routine schedules
- Spotty attendance and participation

Interfacing processes
- Demand plans reconciled
- Supply plans aligned with demand plans

Stand-alone applications
- Demand planning systems
- Multi-facility advanced planning systems
- One-way interfaces only

STAGE 1

STAGE 2

STAGE 3

STAGE 4

IDEAL PROCESS

Event-driven meetings
- Run when changes are needed
- Run when supply-demand imbalances are detected

Extended processes
- Demand and supply plans aligned both internally and externally
- Collaboration with most suppliers and customers

Full set of integrated technologies
- Advanced S&OP workbench
- Eternal-facing collaborative software integrated with internal planning systems

CLASSIS PROCESS

Formal meetings
- 100 percent attendance and participation

Integrated processes
- Demand and supply plans jointly aligned
- Collaboration with some suppliers and customers

Integrated applications
- Demand and supply planning programs integrated
- External information brought in manually

Responsive subprocesses in the new proactive model

By integrating new product introductions and end-of-life transitioning with S&OP, businesses can be better equipped to forecast customer needs. This moves them from a reactionary, demand-forecasting-based mode to a proactive and responsive one. The integration of these key processes offers an unprecedented view into the supply chain, bringing about improved resource allocation; reduced inventory; higher customer service levels; and, ultimately, a better understanding of potential risk. This proactive model further establishes subprocesses such as portfolio management (stockkeeping unit rationalization, product life cycle segmentation, and so on) and Pareto analysis (ABC classification), with critical components flagging their rates of change, lead times, road map timings, and life cycle stages. Once a product is identified for potential discontinuation, the model tunes downward supply planning assumptions such as fill rates, lot sizes, EOQ, and MOQ in order to reduce all sorts of inventory—from raw material to on-hand finished goods and packaging materials. This further mitigates inventory exposure risks during the final ramp-down stage. (See Figure 3.)

More notably, latency and variability are eliminated by shaping demand and minimizing the cumulative lead-time elements associated with each link in the supply chain. This drives one set of plans for both new-product launches and those reaching end of life. Planning cycle time is reduced from months to days and the inventory turnover ratio is boosted.

Analytical mind-set to measure process maturity

Domain expertise already exists in the data mining of sales history, market trends, and sizing risks encountered during demand and supply imbalances and inventory liabilities. But S&OP process integration with new-product introductions and end-of-life transitioning is still evolutionary across many industries with low adoption rates. This is primarily due to difficulties in jump starting change management across companies with nonadaptive cultures. However, one can use analytics tools, predictive models, balanced scorecards, and shared performance metrics to bring visibility across several business processes.

As a result of new metrics being measured, monitored, tracked, and reported, some remarkable results can be achieved, including

- improved delivery schedules

- increased market share with faster time-to-market

- enhanced collaboration throughout the entire supply chain

- more manufacturing asset efficiency

- planning-cycle-time reductions

- decreased supply chain risks

- lower shipping costs

- drastic waste reductions

- improved customer relations

- maximized revenues.

Using this model, any residual silos existing among departments and stakeholders are purged, because the proactive model dictates a collaborative platform with the essential elements of early supplier involvement during the engineering design phase. This prevents a great deal of inventory and capacity risk experienced during product launches and ramp-down. Most importantly, companies operating under this strategy will enjoy greater profits and market share.

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Figure 3: New-product introduction planning process with end-of-life product transition

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│ suppliers with product  │              │ new products            │
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│ products on existing    │              │ and any ongoing         │
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│ Align forecasts with    │ ◄············ │ Transition workbook     │
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SETTING YOUR EYES ON THE BIG PICTURE

The importance of focus on supply chain

By William B. Lee, Phd, CFPIM

Why be concerned about strategy? Why not just jump right into the meat of our problems and solve them? Why worry about macro issues and complex expressions? Don't we all just have a job to do? After all, when we as supply chain and operations managers have a problem, don't we just roll up our sleeves and wrestle it to the ground? Let's get on with it!

We don't want our companies to be like that. The big picture is extremely important, and we must link our supply chains with our corporate strategy. Let's begin by understanding strategy: The APICS Dictionary defines it as "how a company will function in its environment" and goes on to explain that strategy specifies how to satisfy customers, grow the business, compete in the environment, manage the organization, develop capabilities and achieve financial objectives. Crafting and Executing Strategy: The Question for Competitive Advantage by Arthur Thompson, A.J. Strickland and John E. Gamble further defines strategy as "management's action plan for running the business and conducting operations."

The supply chain connection

Businesses that succeed in linking corporate strategy with the supply chain view their supply chains as strategic assets. Company leaders know supply chains must go beyond cost savings and significantly contribute to sustainable growth. Consider the following key questions:

- What is your company's strategy?

- How does your company define strategy?

- How do you think strategically?

- What are some of your company's strategic objectives?

- What might be a more effective approach to strategy deployment?

- How do your company's supply chains link with the rest of the organization and vice versa?

The following supply chain strategy models are directly pertinent to this discussion.

Operational excellence. In The Discipline of Market Leaders: Choose Your Customers, Narrow Your Focus, Dominate Your Market, Michael Treacy and Fred Wiersema write, "[Henry Ford was] a paragon of operational excellence because the founder's business model was tuned to a single purpose: delivering an acceptable product at the lowest possible price. As Ford's costs fell, the retail price of the Model T car fell too, from $850 to $290." Ford's supply chain was something we don't see much today—a fully integrated network from the raw materials, through all stages of manufacturing and logistics, to the ultimate finished automobile.

Overall cost leadership. This strategy concentrates on an organization's value chain and how to reduce expenses at each point. A low-cost operation obviously will bring about improved returns—even in a highly competitive marketplace.

Product leadership. Businesses that set themselves apart from the crowd are those that dominate the marketplace by consistently offering the best and most innovative products or services.
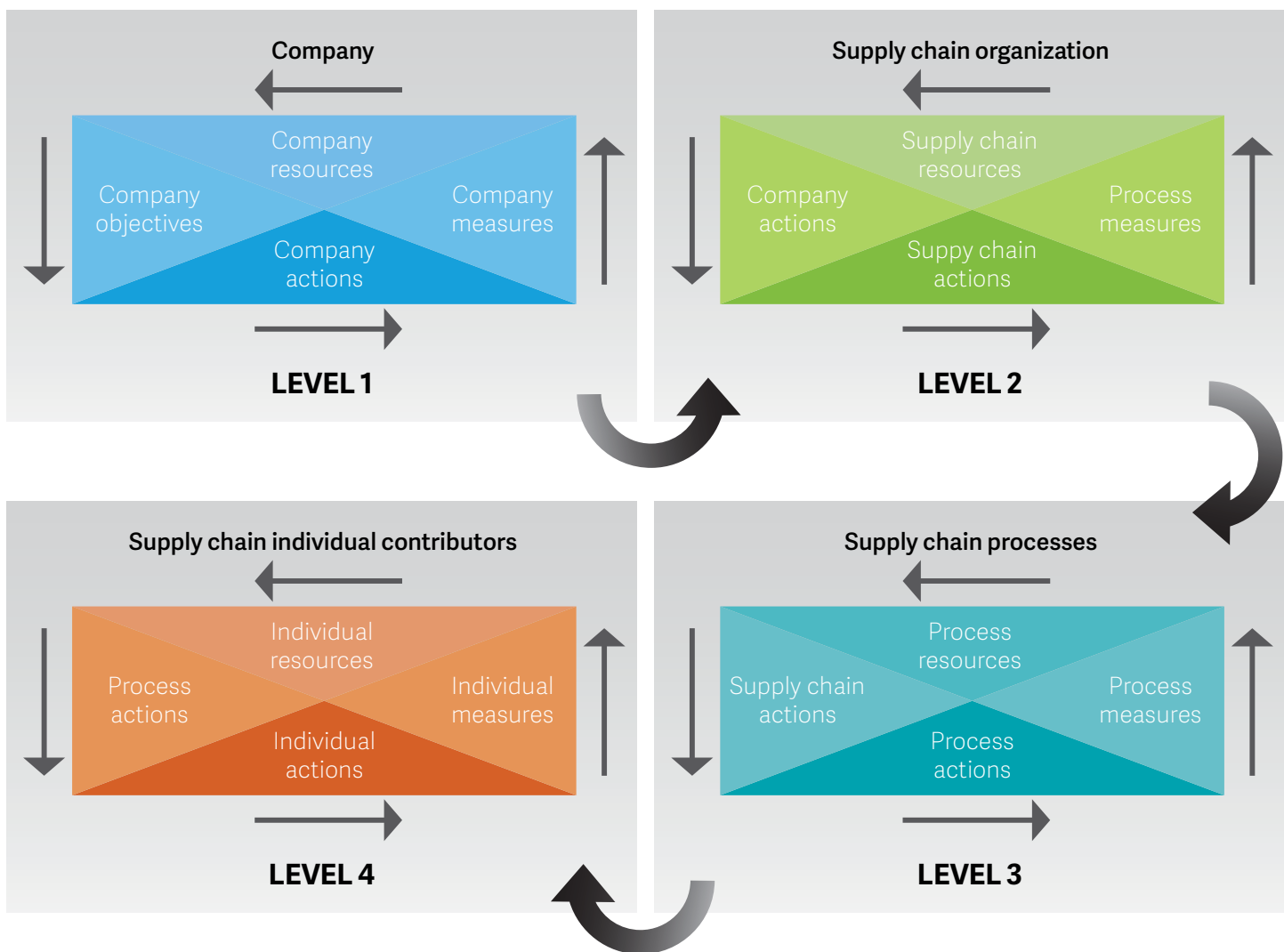
Differentiation. Michael E. Porter, in Competitive Strategy: Techniques for Analyzing Industries and Competitors, discusses what makes differentiation such a powerful strategy. "Approaches to differentiating can take many forms. Caterpillar, for example, is known not only for its dealer network and excellent spare parts availability, but also for its extremely high-quality, durable products, all of which are crucial in heavy equipment where downtime is very expensive."

Customer intimacy. More than low prices, customer intimacy is about a business being a true friend. Becoming the place people go to understand and solve their problems can be invaluable.

Focus. This strategy is about centering on a specific consumer segment or geographic market and serving it more effectively than the more broadly focused competition.

Meeting these strategic objectives requires the entire organization to be connected, understand customer needs, and ensure that the supply chain is clearly tied to corporate strategy.

Supply chains must go beyond cost savings and significantly contribute to sustainable growth.

Company

LEVEL 1

Company resources
Company objectives
Company measures
Company actions

Supply chain organization

LEVEL 2

Supply chain resources
Company actions
Process measures
Supply chain actions

Supply chain individual contributors

LEVEL 4

Individual resources
Process actions
Individual measures
Individual actions

Supply chain processes

LEVEL 3

Process resources
Supply chain actions
Process measures
Process actions

The trade-offs

It's interesting to consider all the different linkages—and the fact that companies cannot serve multiple strategic leaders at the same time. In fact, it's difficult to serve more than one, because they all require trade-offs that balance important factors, of which not all are attainable at the same time. Each of these strategic operating models requires making choices in terms of what to do and what not to do.

The strategic planning process must be linked from the corporate strategic plan downward to the supply chain organization and out to the individual contributor. Figure 1 shows how this process works. Notice the cascading, level-by-level structure. Level 1 represents the top corporate level. Level 2 is the supply chain organization. Level 3 shows supply chain processes. Finally, level 4 is the individual contributor level.

At level 1, the following actions occur:

- Management establishes the vital few strategic company objectives. These are the essential elements of the corporate strategic plan.

- Current and new company actions are specified to support and implement the strategic objectives.

- Company measures are chosen that specify how the actions will be evaluated.

- Company resources spell out what are required to implement the actions to support the objectives.

Level 1 actions become the links to level 2. Company actions set the requirements for the supply chain actions. These, in turn, drive the supply chain measures and the resources required for the supply chain organization. Level 2 actions become the links to level 3 and make up the supply chain in its entirety. Note that supply chain processes are not necessarily contained wholly within the supply chain organization. In level 3, supply chain process actions become the links to level 4, when each person has his or her actions, measures, and resources. In this manner, the corporate strategic plan is implemented with objectives, actions, measures, and resources.

The arrows, which indicate the iterative nature of this process, go around the boxes enough times to get it right. This process

- sets strategic direction for the business

- establishes the objectives to deliver results

- identifies the actions required to meet those objectives and deploys them down through the organization

- creates measures to track progress of the actions and to link back to higher-level objectives and actions

- identifies resources required to complete the actions and align responsibility

- specifies behaviors that are required to implement the strategy.

Companies cannot serve multiple strategic leaders at the same time.

This approach is known as hoshin planning—a system developed in Japan in the 1960s, which is similar to management by objectives. It is more than just planning; it includes doing what is planned and the review and evaluation of what is done. The APICS Dictionary describes it as "breakthrough planning. A Japanese strategic planning process in which a company develops up to four vision statements that indicate where the company should be in the next five years. Company goals and work plans are developed based on the vision statements. Periodic audits are then conducted to monitor progress."

Getting it done

In essence, the process for linking supply chains with corporate strategy is a process of asking three questions:

1. What do we need to accomplish?

2. How should we go about doing it?

3. How well are we achieving our objectives?

It is a simple process in concept. The key to success, ultimately, is to follow the process, measuring progress as you go. Realize that your objective is to fully integrate the organization around a well-thought-out strategic plan and ensure that the supply chain plays an important part in the process.

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PASS OR FAIL

Six software-project questions you must get right

By Bill Monroe, CFPIM, CIRM, CSCP
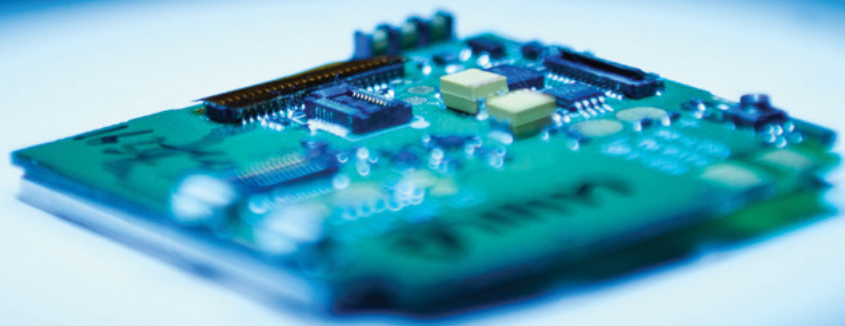
At this very moment, software projects all over the world are failing to deliver promised savings and benefits. Some will be canceled before going on to production. Others will reach production, where they will require constant pampering at a cost greatly outweighing the benefits. Still others, after having been touted as a giant step forward in organizational capability, will shrivel and fade because of a lack of proper support and adoption.

Project portfolio excellence is a methodology that poses six straightforward questions that reveal why a past software project failed; why current ones are failing; and—certainly of great value—why future initiatives may fail. In other words, you can determine which ventures are doomed before they even start. How much time, money and energy savings could that be worth?

Figure 1 shows the project triad. It involves the three groups present in every company that must collaborate effectively in order to achieve software project success. If one or more of the groups is not engaged appropriately, the probability of failure increases.

**1.** **Are senior managers able to fulfill their project roles and responsibilities?**
It's fitting to start with senior managers because their group has the greatest effect on project success or failure. After all, they set the project expectations for scope, schedule and cost. If plans are too aggressive, it becomes impossible to succeed. Also, when an overly aggressive schedule is mandated, permission is given implicitly to bypass quality related activities for the sake of meeting deadlines. Systems created under the pressure of artificial constraints often end up returning less value than the cost of compensating for their shoddy execution.

2. **Are business professionals able to fulfill their project roles and responsibilities?**
Business professionals have the greatest effect on whether a project ultimately fulfills its sponsor's original vision. They take an idea and turn it into action. Business professionals own the processes of an organization. They have the most intimate knowledge of details and, more importantly, exceptions. In addition, they ensure new functionality fits with existing daily work practices and makes sense from a process perspective. If there are any questions as to how new methods will interact with existing ones, business professionals are most able to provide the answers.

Keep in mind: The most talented business professionals also are the busiest. They run as fast as they can just to keep everything on track. How much time and energy do business professionals at your company exhaust every day dealing with post-production quality issues? Every minute spent fixing problems caused by bad systems or data is one that can't be applied to new, more promising initiatives.

Figure 1: The project triad
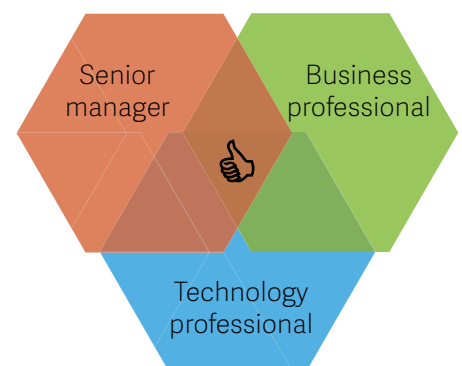
The first three questions focus on the groups of the triad and their roles and responsibilities. The more honest your answers, the more value you'll attain through the evaluation.

3. **Are technology professionals able to fulfill their project roles and responsibilities?** After the processes that will support the future state are designed, technology professionals build the required software and fit it into the existing infrastructure. They can't do this without effective guidance from business professionals; but, often, business professionals are too busy to be adequately involved. Critical decisions end up being made by people who might not be qualified. Important considerations may go unnoticed during the rush to the finish line. And then, before you know it, you've delivered a new application that doesn't meet requirements. When this happens, it's important to recognize that project failure is a process failure.

Everyone involved should own the process—meaning, if a project fails, it's everybody's fault.

Figure 2 shows the project trinity. It's made up of three attributes that are critical to success. Just as with the project triad, if one or more attributes are missing or insufficient, the likelihood of disappointing results increases. The next three questions focus on the attributes of the project trinity and their presence, sufficiency and availability.

4. **Does your organization have the skills needed to succeed with the project?** In the beginning stages of a new project, you should document the skills required for success and how well you're able to apply available resources. Make note of the word "available." It doesn't help if the one person who possesses a critically needed skill is overloaded with other work. On the other hand, when you discover key resources are unavailable, you have an opportunity to plan activities in such a way as to leverage what you do have.

The skills needed for effective project work extend beyond development and project management. Process evaluation, analysis, design and documentation also are critical to project success. Business professionals must possess these capabilities in order to effectively fulfill their roles. Additionally, business and technology professionals need to collaborate and communicate successfully. After all, technology professionals don't understand the business well enough to design systems on their own, and business professionals don't understand programming well enough to create their own systems.

5. **Does your organization have the will needed to succeed with the project?** Many projects have failed because leaders, managers or employees refuse to play by new rules. Demonstrating the will to succeed includes the following key elements:

- Everyone understands their responsibilities under the new process.

Figure 2: The project trinity
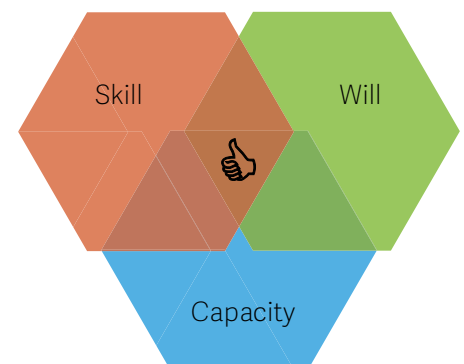
Once again, the more diligently you analyze your particular situation, the more accurate your evaluation will be, and the more your understanding of what's required for project success will grow.

- Everyone is trained to know how to fulfill their responsibilities under the new process.

- Everyone is evaluated to ensure adherence to the new process.

- Other opportunities are found for anyone unable to handle the new process.

Why waste time, money and energy installing new systems or improving processes if you're not willing to make sure the new methods receive the level of support they need?

6. **Does your organization have the capacity needed to succeed with the project?** We've saved the biggest and best piece of the puzzle for last—capacity. In manufacturing, distribution or operations environments, lack of capacity is taken seriously. When it is perceived, strategies are formulated and plans are laid out to address it. In the world of projects and software development, capacity is just as real a constraint. Given the increasing rate and volume of project requests and mandates, it's pretty safe to say there never will be enough time, money or resources to fulfill all project requests.

Once you accept this, it's time to start thinking about how best to use the talent and resources you have already. Focus on capacity for quality work by considering the requirements for each group in the project triad. To avoid wasting resources on projects that have no chance for success is the greatest accomplishment in portfolio management.

The causes of project failure are easy to diagnose and simple to understand. The reason we so often overlook the causes of project failure is because, in many cases, they stand in direct opposition to how we'd like the world to work. We'd like to think projects are straightforward and predictable. They're not. We'd like to think we can just throw anybody at a project, and they'll get the work done. We can't.

In many cases, the causes of failure are in plain sight all the time. Thus, it should be quite easy for us to identify and prevent breakdowns. Begin by opening your eyes.

Bill Monroe, CFPIM, CIRM, CSCP, will present Project Portfolio Excellence at the 2010 APICS International Conference & Expo. Visit apicsconference.org to register. Monroe may be contacted at cco@chiefcollaborationofficer.com or (502) 598-1802. Visit chiefcollaborationofficer.com for more information.

GLOSSARY

GLOSSARY

Critical path
Critical path is the longest sequence of activities through a network. The critical path defines the planned project duration.

Project
An endeavor with a specific objective to be met within predetermined time and dollar limitations and that has been assigned for definition or execution.

Project costing
An accounting method of assigning valuations that is generally used in industries where services are performed on a project basis. Each assignment is unique and costed without regard to other assignments. Examples are shipbuilding, construction projects and public accounting firms. Project costing is opposed to process costing, where products to be valued are homogeneous.

Project life cycle
In project management, a set of project phases (objectives definition, requirements definition, external and internal design, construction, system test, and implementation and maintenance), whose definition is determined by the needs of those controlling the project.

Project Management Body of Knowledge (PMBOK®)
All the knowledge within the project management profession; this includes all published and unpublished material, knowledge that rests with practitioners and academics and practices that range from traditional to innovative. Access the PMBOK.

Project management
The use of skills and knowledge in coordinating the organizing, planning, scheduling, directing, controlling, monitoring and evaluating of prescribed activities to ensure that the stated objectives of a project, manufactured good or service are achieved.

Project management team
In project management, the personnel assigned to a project who are directly involved in management activities.

Project network
A diagram showing the technological relationships among activities in a project.

Project plan
In project management, a document that has been approved by upper management that is to be used in executing and controlling a project. It documents assumptions, facilitates communication and documents the approved budget and schedule. It may exist at a summary or a detailed level.

Project production
Production in which each unit or small group of units is managed by a project team created especially for that purpose.

Project risk management
In project management, a systematic process of controlling project risk. It includes maximizing the likelihood and effect of positive events and minimizing the likelihood and effect of negative events.

Project scope
In project management, the work required to create a product with given features and options.

Project summary work breakdown structure
A work breakdown structure that is developed down to the subproject level of detail. *See: work breakdown structure.*

Project team
An inclusive term incorporating the workers assigned to the project, the project managers and sometimes the project sponsor.

Project team directory
A list of team member names, roles and communication information.

Work breakdown structure
In project management, a hierarchical description of a project in which each lower level is more detailed.

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If you have comments or questions, contact askapics@apics.org.

ABOUT APICS SUPPLY CHAIN COUNCIL

APICS SCC is a nonprofit organization that advances supply chains through unbiased research, benchmarking and publications. APICS SCC maintains the Supply Chain Operations Reference (SCOR) model, the supply chain management community's most widely accepted framework for evaluating and comparing supply chain activities and performance. APICS SCC enables corporations, academic institutions and public sector organizations to address the ever-changing challenges of managing a global supply chain to elevate supply chain performance. APICS SCC is part of APICS, the premier professional association for supply chain and operations management. **Visit apicsscc.org to learn more.**