

## Getting Aligned and Staying in Sync for Successful Projects with Outside Partners and Other Virtual Team Members

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### Introduction

A true project team is a cross-functional group of people working together to develop a “product” according to a shared vision and deliver it to its intended customers. A “virtual project team” means one with one or more members geographically distributed from others on the team. It can include individuals or sub-groups who are not part of the corporation who owns the product, such as independent consultants or contractors and third-party development organizations.

The promise: Use outside partners and virtual teams to add to our resources and our expertise and get more done sooner for our customers. A company can concentrate “in-house” on core competencies and turn to the outside expertise of organizations and individuals on an as-needed basis, or simply turn to outside/virtual resources to add to the people we have available for projects.

The reality: Virtual teams, if not created and managed properly (even if all members are totally within our own company) can fall seriously short of the project’s goals including scope, schedule, and costs, given the extra challenges introduced by team member separation and context. Our approach to such teams must take into account the extra work needed to achieve truly synergistic teamwork across distance and organizational partnerships.

The success of a virtual team, especially those with members from different organizations, depends upon the degree to which the various members are aligned in key areas related to the content of the project itself and the way the team will work together to meet the project’s goals. The project manager must understand how to assess alignment of the team members in all those areas, plan a project considering the specific ramifications of remote members, and manage the project to its successful completion.

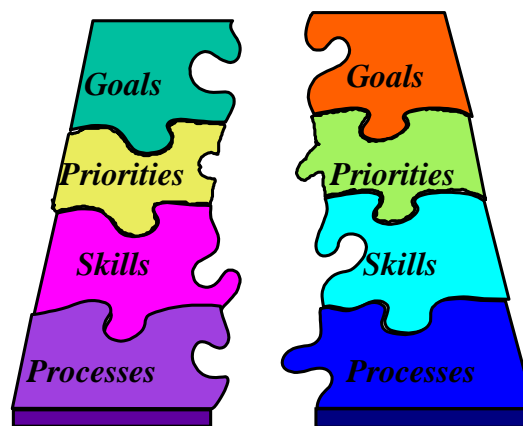
This paper discusses several key “alignment factors” and illustrates their potential impact using examples from two projects. The paper summarizes actions project managers can take in planning and managing such projects including questions for assessing and selecting outside partners to be part of a virtual team.

The goal is to truly achieve “one team”, getting a scattered group acting together to meet the project’s goals.

### Critical Alignment Factors

The success of the team will depend upon the degree to which these various members are aligned in the following areas:

- goals of the project
- priorities for how their time is to be spent
- skills, experience, and capabilities
- project and development processes



### **Project Goals (and team member values):**

These factors affect the commitment given to a project by the team members, both to the project outcome and to the means of getting successfully to that end. The alignment on project goals must be watched carefully, because virtual team members tend to (and are usually expected to) operate more autonomously, which increases the risk of differing perspectives and misunderstandings which can seriously undermine a project. Mismatches on project goals most often show up in the definition of a product to be developed, choices on implementation, and the commitment to completing the project on schedule and budget.

The overall *goal* of developing any product or service is to deliver value to the customer and an acceptable return on investment to the

company. Achieving maximum return on investment depends upon a company's ability to correctly balance among scope (product value and performance), schedule, and costs. The optimum balance among these factors must be determined based on the market window for a product, current and envisioned competition, customers' perceptions of needed products and features, and the monetary size of the market vs. the investment needed to execute the project. All members of a team must understand how the factors contribute to the projects goals and their own work, and commit to making decisions that support those goals.

Team members' related *values*, the relative worth or importance they attach to different aspects of the project and its goals, influence how they make those tradeoffs to accomplish the project goal. Incompatible values can sabotage the return on investment of a project. For instance, a developer may be faced with "make vs. buy" decisions for the product element they have been contracted to create. The "not invented here" syndrome is very common in technology development: individuals may value their ability to create a product or system from scratch, without regard to the time and money consequences. Some organizations may exalt the ability to create complex, full-featured, technologically sophisticated products over the expediency of getting to market with a simpler product that would adequately satisfy customers.

**Priority:**

"A preferential rating, especially one that allocates rights to goods and services usually in short supply." Team member agreement on the priority of this project vs. others is always important to ensure this project will get the expected attention. With remote team members and outside organizations, clarity on priorities is even more critical, since the project manager will be much less able to "see it" if team members are off working on other things instead. Consultants and third-party groups often take on multiple simultaneous projects. Resources can be pulled from one client's project, or that project left with junior engineers, if another endeavor is of higher priority to the development organization's or consultant's financial success.

**Skills, experience, and capabilities:**

This aspect refers to "the ability to use one's knowledge effectively and readily in execution

or performance; a learned power of doing something competently." The ability of any team member to do the job is of course critical. When a consultant or development organization is engaged as part of a virtual team, is that hiring accompanied by the same level of due diligence as the hiring of permanent employee or the acquisition of a company? Sometimes not! Team assignments should take into account skill level, experience, and track record in these areas: technological or other functional expertise; estimating, risk management, and other project management skills; and ability to communicate verbally and in writing with other team members. Research into risks in software development projects using outside contractors found that among the most prevalent sources of friction between team members were bidding on projects where the contractor has inadequate skills or capabilities, promising impossible delivery dates, and inaccurate and inadequate status reports. Even when virtual team members are more known quantities from within the company, these attributes take on heightened importance. Remote team members are working more on their own out of sight, making their estimating, self-management, and communication skills that much more important.

**Processes:**

A process is "the series of actions or operations conducing to an end." As expressed by the Software Engineering Institute's Capability Maturity Model, companies work to gain maturity in their project processes to ensure repeatability of positive project results. Processes help make the "known" activities more predictable, and the unknown more manageable. A process also frames interactions between disparate groups, paces work, reduces uncertainty, and helps build common values. Virtual team members must first understand the value of development processes; then they must have a defined process and be able to execute to it. Typically, smaller third-party development organizations are less process-oriented than the firms which hire them for outsourced development. Even groups within the same organization may have different opinions on how to go about their project work, setting up issues when that group or someone from within it lands as a virtual member of another team. Adequate process alignment helps scattered and cross-organizational teams work together effectively.

## Example Projects

In my experience, lack of alignment in the above areas can lead to significant project delays and serious product problems. The following are vignettes from projects to illustrate the importance of those factors.

### **Example 1 – Game development product**

A publisher of CD-ROM based multimedia education and entertainment titles contracted with a small development firm to develop a new entertainment title. The publisher was new at using outside developers. The development firm was contracted to produce a game based upon a prototype that met the publisher's vision of what their next title should be: a fun flight-simulator for kids, with funny scripts for adults. Payments were to be based on the publisher's receipt of specific deliverables such as documents and prototypes at monthly milestone intervals. The developer was on the west coast of the U.S., the publisher on the east coast. The team approach was very hands off with a few checkpoints and high level status reporting to the publisher.

After 4 months the development house communicated that they were approaching a schedule problem. The publisher ultimately realized that although the previous contract milestones had apparently been satisfied, the developers were now late because they had been spending most of their time defining and creating the movies that would be played at different points in the game; the game was becoming a story, not a flight-simulator. The movies were not of high importance to the publisher; the game play of the product was, and the publisher realized that the game definitions were almost non-existent. The publisher had an in-house development process that emphasized early definition of game vision and design, and assumed these developers would be self-policing in this area with their own solid process, so the early project milestones had not stipulated review of game design documents. The developer, by contrast, viewed the game design as something that would creatively evolve over time and did not have a development process that emphasized early game definition.

This mismatch in development processes resulted in a massive contract re-negotiation when it became apparent that the developers had gotten off-track and were not implementing

the type of game desired by the publisher. Schedule time was lost putting effort into the game designs mid-stream and overhauling the scripts to make the product match the publisher's vision. In addition, it became clear that current staffing was not sufficient to make the original schedule, and possibly not even the drop dead date for delivery in time for the next Christmas season. The young development organization simply had very little project and risk management skill and experience.

Ultimately project management consultants were brought in to help re-plan the rest of the project and provide the publisher with weekly visibility into progress. The milestones were redefined, much more specifically, to ensure that monthly progress shown was not "artificial". Consultants were brought in to assist with detailed game design, and the format and content of a complete design document was imposed by the publisher. After the final re-planning the project was projected to be 5 months late but was expected to finish in time for the Christmas season. The total project cost increased by 50%.

### **Example 2 - Outsourced Hardware Design**

An outside development organization was contracted to create a hardware module for a wireless communications company. The developers' expertise was digital signal processing for radio-frequency applications. The contract was basically handed over to the outside house with little technical oversight. The developer delivered a "complete" design, along with test data, to the company. However, the design proved to not be manufacturable in quantity. It turned out the development organization had never developed hardware for mass production; they were oriented to research and development and in the past had always let someone else improve their designs for volume manufacture. The design verification tests had not been complete because they had not considered corners testing for environmental factors or testing of an adequate number of modules. This R&D orientation also led to a design that Underwriter's Laboratory (UL) would not approve, leading to scrapping of several hundred modules, a re-design of part of the board, and a very late beginning of beta testing. Completion of the project required the company to invest in-house engineering resources to modify the design and shepherd the board through production ramp-up, and in the end this product was a year late coming to market.

## Project Manager Actions

To avoid such scenarios, project managers can take the following actions to plan and manage projects that include virtual team members, including those employing consultants and third-party development organizations as virtual team members.

### 1. Assess virtual team member alignment.

Take the time to review the 4 major alignment factors for virtual team members as part of their suitability for this project. For each factor, identify possible issues, discuss them with the potential team member, make a conscious decision as to whether to go forward with the relationship, and if so, plan for any areas where work needs to be done to get the needed alignment. The following questions can aid the assessment:

**Project goals and related values:** Do all team members understand the “return on investment” goals of this project and the feature, technical and cost tradeoffs that are acceptable? Do your remote team members commit to your project schedule? Will they do all the things needed to achieve the project goals despite their distance and any organizational differences, including participating in concrete detailed planning, producing status reports as necessary, attending team meetings if required, and working hours that allow you to reach them quickly and predictably? Do they believe in creating high-quality documentation? In addition, for outside partners being considered: Are they interested in a long term relationship with you? Are they interested in participating in your industry in the long term? Are they as an organization or as an individual truly interested in the type of work required by this project, or are they taking this project as a stop gap until they find the work they actually want to do?

**Priorities:** Is the virtual group or individual dedicated to your project or spread among projects? What is the outside partner’s workload? What is the unseen workload of in-company virtual resources you’re considering? Are other projects they’re working on higher priority than yours (and how will you know if a virtual team member’s priorities are being changed?)

**Skills, experience, capabilities:** Has the person/group done this kind of work before? Do they have the appropriate technical or domain skills? Do they have extensive experience using these skills, and a track record of related

on-time projects and high-quality products? Do they have experience putting these skills to use *in your industry*? Do they have experience with the development and testing tools you want used on this project? What are the communication skills of the individuals, both verbal and written (will they be able to communicate both technical and management information)? Do they produce usable, complete documentation? Do you have a say in what level person works on your project, e.g. junior engineer vs. senior engineer? (For third-party development organizations, the skill level and experience required by the individuals should be defined in the contract). What are the technical and project management skills of the managers in an outside partner organization and can they be counted on to manage their aspects of the project? Do they know how to estimate project work and can you count on the accuracy of their bid for the project?

**Project and Development Processes:** If your virtual team members are in different organizations, do they understand the concept of using a project and development life-cycle for risk management and predictability? Do they have established configuration management processes and systems? Do they know how to define product requirements? Do they routinely perform design reviews? Do they understand design for manufacturability, serviceability, etc. and take a cross-functional, concurrent engineering approach to product development? Do they have defect tracking systems and do they use them during product development? Do they understand and perform all levels of testing, such as unit testing, integration, system testing, usability testing? Do they have significant experience using a development process on different types of projects, especially ones like yours? If your virtual members are in your organization but located remotely, are you sure that they do understand, have access to, and consistently use the supposedly accepted processes and tools of the organization?

### 2. Kick off the Project Together

By using the alignment factors to assess potential outside partners for your virtual project team, or sanity check the suitability of internal but remote team members, hopefully you can assemble the makings of a strong virtual team. Now it’s time to do certain things together to create a true TEAM of these scattered resources.

**a. Agree on the project vision.**

All team members should participate in defining the vision of the project together. Who is the customer? What benefits are being provided? What factors will the customer use to judge the quality of the project's main deliverable (what most dictates the product's value to the customer?) What key technologies and features are to be included? What crucial product factors must be considered, such as usability, regulatory certifications, environmental constraints, and user documentation? What are the agreed-upon financial: cost and price targets, perceived market window or acceptable completion date, allowable project costs, etc.?

A team kickoff meeting can be used to get the team aligned on these goals. An effective agenda for a kickoff meeting includes doing the following actual project work together:

**Project Kickoff Meeting Agenda topics –  
Project Definition**

- Create a team roles list, with detailed responsibility paragraphs.
- Create a draft Project Vision document that covers customers and benefits, critical success factors and completion criteria, major features and technology to meet customer needs, and project schedule and cost targets.
- Create a risks list and rate each for likelihood and severity.
- Discuss high-level project approaches, major areas of work, and a possible high-level timeline for the project.
- Identify what project parameters are set and which are flexible (scope, schedule, and costs).
- Agree on next steps for getting through the rest of the project definition and planning work.
- Agree upon key aspects of project and development processes to be followed by all, including partners and other virtual team members. (See next section.)

By doing this draft project definition work together early, everyone gets exposed to a view of the entire project and its critical goals and

everyone's general responsibilities, not just their slice. If at all possible, get all your team members, or at least key person from each functional area, together face-to-face for this session. This is a key place to invest money in having your virtual team members present.

**b. Pay attention to relationships and quality of ongoing communication**

Past the kickoff, the team can do things to help maintain sense of personal connection among everyone, not just those who are co-located.

- Plan to get people together at key points in the project. The kickoff process is a key time to get the team together face-to-face if at all possible. Major milestones are another opportunity, especially those that represent a key transition of work between groups. Spend money to get people together periodically. It doesn't even have to always have to be entire team.
- Use the team roles list as a communication tool, not just a list. Pay close attention to rich and strong responsibility statements so it's clear who is responsible for what. Create a Responsibility Allocation Matrix that makes it clear what people need from each other, who's the go-to person for each area, how each person should be involved.
- Create personal web pages for each team member showing their location (with pictures!), time zone, work hours, availability, and contact info. Make each person "real" to the other team members.
- Create an online project space with all project information and deliverables stored in one place to give everyone continual access to information and the big picture.
- Establish communication norms such as a commitment to a maximum turnaround time on emails; how cc: should be used to keep people informed (or not overused to avoid swamping people's inboxes!), and how issues will be raised and addressed.
- Consider using instant messaging to have team members online with a virtual presence – a sense of being "in the office together" at their desks. Just be sure to set communication norms such as setting busy flags when the person doesn't want to be interrupted.

- Consider using web meeting and video conferencing tools for team meetings and reviews. However, this is an area to experiment with and see what use of tools truly helps team members work together and feel connected better. For example, a poorly set up video conferencing approach, where a big remote group far from the camera such that no faces can be seen, can feel like a much worse “connection” among people than just being on the phone.
- Conduct virtual parties when you can’t get everyone together. Have a party in each location with phone presence. Send gift baskets to every virtual team member. Have an executive give a party speech to everyone at once.

### c. Negotiate the process and deliverables.

The project and development process to be followed needs to be aligned between organizations and individuals. The overall approach should be agreed upon including team meeting interactions and major review and status checkpoints during the project.

The deliverables between groups during the development phases must also be identified, especially those used as a critical communication mechanism with remote team members. A project is a continual exchange of information. The team must analyze and plan their interactions to avoid misunderstandings and unnecessary delays. All deliverables must be defined in detail, to ensure that the information is on target and provides value, and to make sure that team members have clear concrete goals for small incremental project progress. What is the purpose of each deliverable? What content must it have to be considered complete, and when in the project should it be complete to minimize risk? On the technical side, the team must pay special attention to defining the content for requirements documents, design specifications, test plans, and final design documentation. On the management side, the in-house project manager must identify the responsible manager within the outside organization and reach agreement upon the project plan elements, including the level of detail for estimating and planning and the methods for tracking and communicating status.

This process alignment effort usually requires cooperation and salesmanship to overcome inertia and resistance to change among remote

team members who do not necessarily want to change how they approach project work.

One approach to consider is conducting a process negotiation workshop as part of the project kickoff process. The objective statement for such a workshop is “Upon completion, participants will agree upon what aspects of each of our project and development processes are critical to achieving the project goals. They will be familiar with the major phases, activities, and deliverables of each others’ process, understand which deliverables we’ve agreed to do, and understand their personal role and deliverables.” A deliverables definition form can be used during the workshop to express to agree upon the purpose, audience, and contents of information to be exchanged in the form of written deliverables. See the agenda below for a process workshop and the contents of a deliverables definition form on the next page.

#### Agenda for Project Process Workshop

##### Introduction:

Objectives of the workshop  
Importance of agreeing on process

##### Process Overviews:

Overview of Org 1’s process and benefits  
Overview of Org 2’s process and benefits

##### Process Details:

*Each Organization’s Process Phase Detail -  
Activities, Deliverables, and Team’s Role*

##### Cover quickly together:

- Purpose of the phase
- Work included in this phase
- Reviews we need to have
- Phase exit – what means we’re done

Workshop breakouts: Which of these things do we need for our work together? What specific workflow and exchanges?

Decision-time: How we’ll do it together

##### Review results:

*Joint process elements we’ve identified:*

Key milestones  
Management checkpoints  
Project and component reviews  
Deliverables lists and contents

##### Go forward:

Create Project Communication Plan  
Decide escalation , management of issues

**Example Deliverables Definition Form**

<b>NAME OF DELIVERABLE</b>	_____
	_____
<b>Responsible:</b>	_____
<b>Contributors:</b>	_____
<b>Reviewed by:</b>	_____
<b>Approved by:</b>	_____
	_____
<b>To be reviewed when:</b>	_____
	_____
<b>Purpose:</b>	_____
	_____
<b>Content:</b>	_____
	_____
	_____

**d. Plan the work and dependencies**

With the project kicked off and key joint process elements agreed to, all members of the team need to make accurate estimates of project work, especially considering the possible inefficiencies inherent in working with a remote outside consultant or organization. The project manager should analyze communication risks as well as technical risks, looking for areas where the physical exchange of information could break down or be delayed due to tool incompatibilities. Pay special attention to technical and communication risks and form detailed contingency plans. These plans must address any weaknesses identified in the assessment of the team members against the alignment factors.

Team member responsibilities should be explicitly defined and made visible using an accessible document such as a responsibility matrix. Everyone on the team must be given

the big picture, so that they know how their individual work fits within the entire plan. The schedule should be built to provide this information, and to make clear the dependencies between groups.

**e. Manage the Entire Project to Conclusion**

During the project the manager must continue to treat any outside organization and virtual team member as truly part of the team, keeping them informed and closely coupled with the in-house team members and tracking the work of the project appropriately.

Any team’s tracking approach should be practical and efficient, not unproductive overhead. The goal is to ensure accurate visibility into project progress (both within the company and at partners) and provide early warning of threats to project goals. Aspects of progress tracking that apply to virtual teams as well include:

- Streamlined documents that capture and communicate milestones, actions, issues, risks.
- Periodic team and sub-team meetings supported by those documents and focused on assessing current state of the project, against its business goals and work plan, clarifying most important work for the next period, and taking concrete action on risks and issues.
- Key “project content and context reviews” that ensure elements of the project are being reviewed thoroughly, and early enough to uncover quality or completeness issues, or mismatch with the project’s goals.

**Coordinating around a Milestone List**

One key technique for any team is to use milestones that pull together the work of all the parties involved. The caveat is that to be helpful, the milestones’ meanings must be clear to everyone, including remote team members. “Done” for each milestone must be clearly defined and agreed upon by all. Part of defining “done” includes being very clear about what work feeds each milestone – what tasks have to be done for this milestone to be done? Virtual teams can use this approach to great advantage, clearly defining frequent milestones and showing the tasks from different scattered team members that define “done” for that item. This allows teams to stay in synch on

dependencies without tracking to an unwieldy detailed schedule. Consider defining high-level business milestones and key internal milestones such as handoffs between groups. Then identify the driving tasks that have to be complete for the milestone to be complete by who, and define completion criteria and success factors for each milestone. Create a milestone table pulling that information together and use it as a tracking tool.

**Team Status Communication**

Continue to highlight to the team upcoming dependencies among scattered people and groups. Promote frequent exchanges of information that will show what progress is being made and highlight immediately any misunderstandings regarding project or product goals. Outside organizations or individuals should be included in normal team status meetings. The project manager must be especially proactive in promoting communication and identifying and managing risky areas when virtual team members are involved. Focusing on milestones and risks can help outside organizations not feel inappropriately micro-managed while keeping everyone intent on whether the critical project dates are being met.

**Monitoring Visible Deliverables**

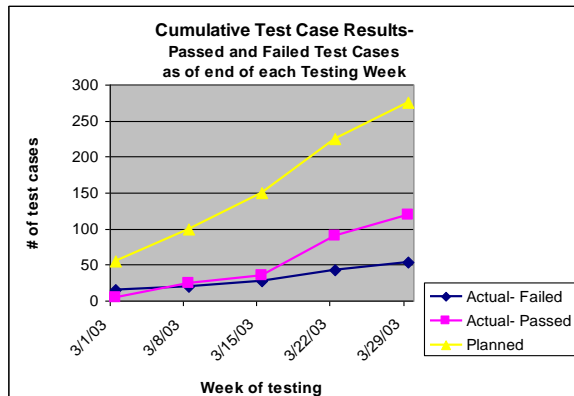
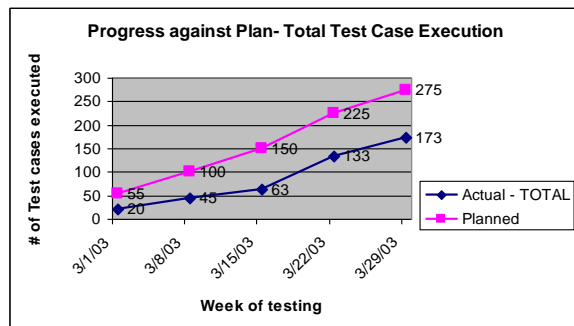
Another technique for maintaining visibility into unseen work is to track small tangible “work product” items rather than simply asking for task status. The problem with tracking tasks, especially longer ones, is that teams can be lulled into thinking that the project is fine just because work is getting done and no one has flagged an issue. And who knows if “80% complete on this task” really means it’s almost done, especially if you can’t see that person and their work?

The key question is this: Is enough work getting done fast enough to be on track, or able to catch up if behind? With virtual team members, the project manager loses all the visible cues that can signal potential problems - grousing, low productivity, stress, etc. So a tracking approach that yields more objective information on completions and time trends can be especially helpful with a virtual team.

So consider tracking “visible deliverables” instead of tasks - small pieces of the project, small duration activities with tangible outputs or “deliverables”.

A perfect example of the value of tracking visible deliverables: testing efforts. Rather than allocating a big block of time to testing and asking for ‘task status,’ track the execution of actual test cases (“visible deliverables”) against a plan for how many should be executed each week. The pace of testing can be mapped out, a number of cases per week determined, and the testing schedule set accordingly. Then each week, capture the number of cases actually completed, and compare the two to see if you’re really on track.

In the graphs shown below, the project manager has tracked weekly test case execution against a weekly testing plan in a spreadsheet, then created a graph to show the results visually. The curves in the graphs show that not only is the team behind, they are not on a pace to catch up and finish on time!



**Using Reviews Effectively**

Even if an outside organization is providing a “turn-key” solution, where the company is delivered a final product, the contract should include the right to review engineering specifications. Determine whether pre-releases of prototypes from an outside developer would be beneficial for spot-checking quality and completeness. Hold frequent interim informal reviews on works in progress such as

requirements specifications and designs, to uncover misunderstandings as early as possible

Review the major project components themselves at logical checkpoints. For example, designs, prototypes, draft publication sections, new report formats for a data analysis project, plans/drawings in a construction project. Review for not just their content per se, but also whether this component is also supporting the goals of the project:

- Are scope goals still being met?
- Are costs still on target?
- Will the component meet its intended functionality and purpose?
- Is anything off track and if so, what do we need to do about it?

The key to having effective reviews on any project include the following items. The project manager may have to work harder to achieve a fantastic review when team members are scattered, and possibly even more so if there are outside organizations involved that are not used to this level of scrutiny of interim work on a project!

- Get the right attendees for thorough cross-functional review.
- Allow time for review of materials before the meeting and make sure those who attend have actually done so.
- Define completion criteria for the deliverable being reviewed.
- Use checklists to ensure all the right subjects are being covered in the review.
- Formally acknowledge whether this component has passed its review. If this virtual team involves an outside company, contractual agreements may need to be addressed if not.

## Conclusion

The use of virtual team members, including outside consultants and development organizations, can provide companies with additional effective avenues for successful projects that help a company achieve critical business goals. However, any endeavor making use of virtual project teams must be managed appropriately to ensure that the desired return on investment is actually achieved. Attention must be paid to the alignment of the team members on project goals and their related values; their priorities; their skills, experience, and capabilities; and project and development processes. Assessment of these factors will provide the project manager with criteria for selecting outside development organizations and guidance for setting up good relationships with internal but remote team members. The team can get insight into potential problem areas and do whatever special planning and management is necessary to make the virtual project team a success.