Remote Control:

How to Get Productive Teamwork from Distributed Project Teams

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Introduction

Managing any project team can be challenging. Managing a *distributed* team is a challenge cubed.

In any project, coordinating the workflow among your resources is almost always difficult. When multiple teams are involved, that challenge is multiplied; if those teams are distributed across various campuses, countries or even continents, the effect on complexity is exponential, escalating the challenge in three dimensions:

1. **Poor communications:** When you collaborate across distances, bringing everyone together for meetings or calls may be difficult or impossible, compromising the decision-making process.

2. **Distance adds delays:** Every mile adds minutes (or hours, days and weeks) to the workflow. Working across multiple locations means additional wait times for parts, information, decisions, responses, plans and more.

3. **Too many variables:** For managers, there are simply too many moving pieces, too many parts (tasks, supplies, locations and resources) and too much data to manage project information effectively among all the players.

With increasing complexity of managing distributed teams, the required efforts and costs increase. Even more importantly, managers are forced to devote more of their scarce resource, management attention, to organizing and controlling team performance. As managers are more and more immersed in ensuring current performance of their teams they can spend less time on planning and catering for the future of their business. Strategic considerations are pushed aside by fire fighting and other execution conflicts.

For distributed team management, the ugly truth is that traditional tools (such as spreadsheets, groupware, SharePoint™, and ad hoc meetings) fail to master the project execution complexities imposed by multiple tasks, resource groups, and locations. The combination of data profusion and location confusion makes it difficult for managers to balance load and capacity: the resources available for the work at hand.

One approach to resolving the problem created by dispersed teams is to focus on the "team" aspects of project management. Effective leadership, clearly defined roles, conflict resolution mechanisms, etc. are necessary conditions to project success. However, they are not sufficient as they do not address the fundamental issue of accomplishing the work. As a manager, you must master location confusion with superior communications and collaboration, and control data profusion through more effective ways of compiling and distributing information. There are any number of tools that might help, but a truly effective solution must give you the power to control the four most urgent challenges faced by managers of distributed teams:

> "For distributed team management, the ugly truth is that traditional tools (such as spreadsheets, groupware, SharePoint, and ad hoc meetings) fail to master the project execution complexities imposed by multiple tasks, resource groups, and locations."

1. Synchronization of work and resources

2. Managing deadlines – commitments and delivery of internal and external task completion dates dictated by the project

3. Reconciliation of resource capacity with work load

4. Managing risk – understanding the level of uncertainty in the project plan to effectively manage execution
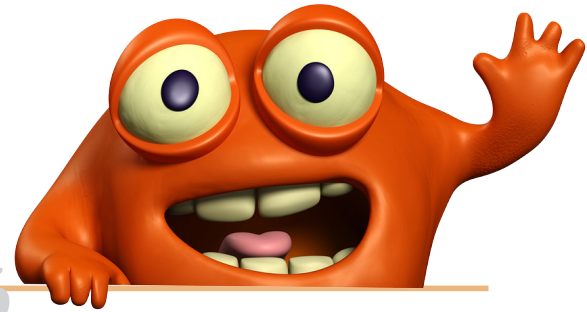
Synchronizing the right work, at right times, regardless of distance

The very essence of teamwork is communication of a shared vision and action plan that synchronizes individuals to a common objective. But when team members are dispersed among different floors of a building, different buildings of a campus, different cities of a region, or different continents of our world, communicating a shared project vision or even status updates can be difficult, if not impossible. When people don't have the right picture of project status, they might work on the wrong things, or the right things in the wrong order, or engage in frequent multitasking that kills productivity. Even worse, tasks that were completed without sufficient or accurate input information often need to be redone, incurring additional costs and delays.

Across distances, meetings to facilitate communication become more difficult to execute effectively and as a consequence, decision-making decelerates. Resources far from headquarters find it hard to connect the dots between their activities with project or corporate goals; with distance, they often feel that their managers have little understanding of their problems, reducing both resource accountability and morale. Within this communications vacuum, they can feel that they are being "forced" to do things without understanding why. As trust among team members disintegrates, so too does productivity - and all projects suffer.

> The very essence of teamwork is communication of a shared vision and action plan that synchronizes individuals to a common objective

The major aspects of location confusion are:

- **Time phasing – delays in communications:** When working across multiple time zones, there are delays in communicating critical information: task completions, blockages in progress, quality problems, opportunities, etc. In this environment, you can't always get the answer you need when you need it.

- **Batch communications** – not all information is shared: Distributed teams rely on meetings to communicate progress and assess project status. These meetings, even if they occur daily, are limited in scope and duration, forcing collaboration into a narrow timeline. The casual conversations that take place over lunch and coffee never happen, losing a critical aspect of collaboration.

To close the gaps between team members, managers conduct meetings across distances to share information, expectations, updates and responsibilities in a timely (and therefore relevant) way. Unfortunately, many familiar tools cannot fill the time and distance gap. Presentation software is static and does not facilitate two-way communications; online meeting tools are better, but lack the means to gather collective data from all the team members and immediately present a real-time picture of project status and the work necessary for moving forward. Without adequate inputs from all participants, meetings can degenerate into tense stand-offs packed with defensiveness and distrust.

Effective communication and synchronization demands a different or higher discipline. Since the time shifting and distance are immutable, the team must be purposeful in two dimensions: frequency and content. What must be communicated that adds value (causes forward progress) to the project and how frequently should communications take place?

> **Effective communication and synchronization demands a different or higher discipline**

Two things dictate the frequency of the project meetings: the rate of task completions and the risk of not completing tasks on time or within scope. At the beginning of a typical transformation project, there is a great deal of risk present, and no one has a clear idea of the work or the process to complete it. Therefore, daily meetings, at a minimum, are required. But as the team gains control of the project, the risk declines and the meeting frequency can be reduced to a "natural" rate dictated by the length of the tasks in the project. For example, if task durations are measured in days, a twice weekly update is sufficient. Longer durations can allow for more infrequent project reviews.

The second aspect of synchronization is a discipline of communicating the right information. To determine what should be discussed, the team must be able to see the status of the project and the path forward. A visual representation of the project path (the process) and the current status is critical to determining the content of the communication.

The visual representation provides a context and the project review stand-up meeting propels the project forward. This meeting sets the stage and establishes a hierarchy to solve problems; it focuses the team on the future and orients them to action:

1. What needs to be done

2. Who is accountable for doing it

3. What is the follow-up action
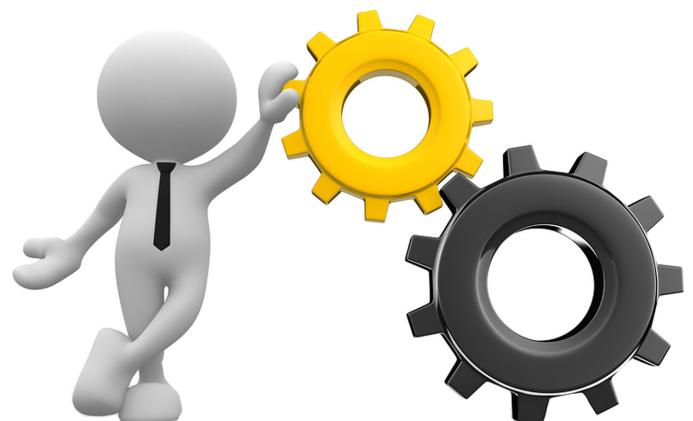
The communication discipline of what gets reported and when is determined by the status of the project and the risk in the project. In the project management context, a meaningful collaboration tool must allow all team members to easily contribute, distribute and share information within an orderly format that visualizes tasks, timings and responsibilities to be completed; in short, a shared, clear vision of the project. With access to the right information, meetings can be both shorter and more effective; by accommodating on-the-fly contributions and insights, they encourage collaborative thinking that reinforces team action and enables innovative problem solving. Instead of preparing defenses, all participants work quickly and collaboratively to assault problems together.

Real Success Among Remote Locations: Helping Team Members Get On Board

An oil and gas equipment company feared that it would fail to deliver the new product it had promised to its customers by the end of the year. They determined that the root cause of the delivery delay was a late chipset design for a critical component. The team responsible for the design, located far from the final assembly site, had fallen four months behind without even knowing it.

Timely communication was vital, but getting the team to regular face-to-face meetings was impossible. Instead, they had tightly choreographed, virtual meetings using a visual project management tool that allowed the chipset team to see for themselves the overall progress of the project and their role within its execution.

At the conclusion of the product release, the team members said they were "overwhelmed" by the amount of work they had accomplished in such a compressed time period, expressing appreciation for the way the visual project system allowed them to prioritize tasks and bring focus to their team's efforts. By being alerted to the significance of their contribution and the delay in their progress, they had reprioritized other less critical work and assigned additional resources to their task, closing a four-month output gap in just one and a half months.

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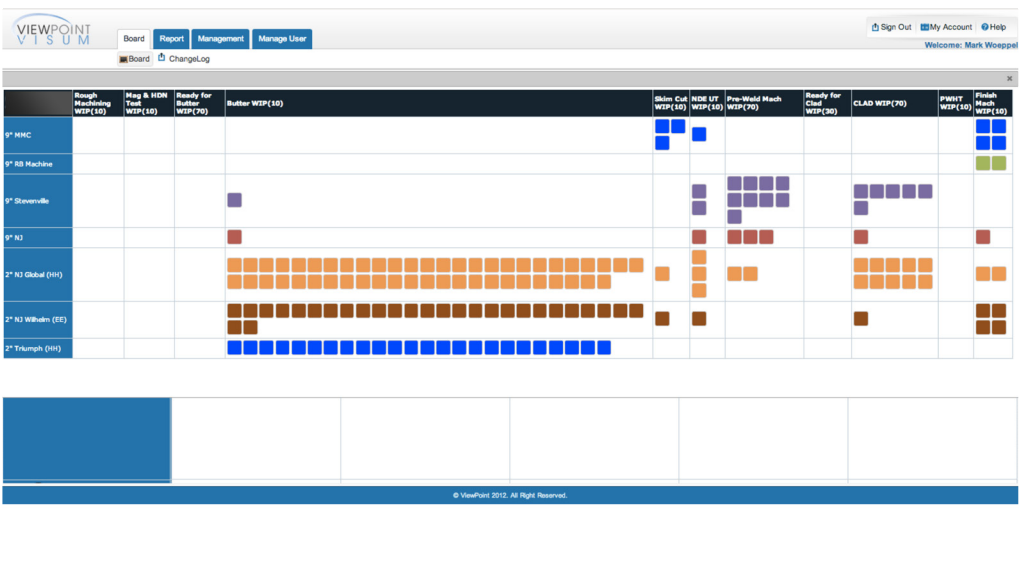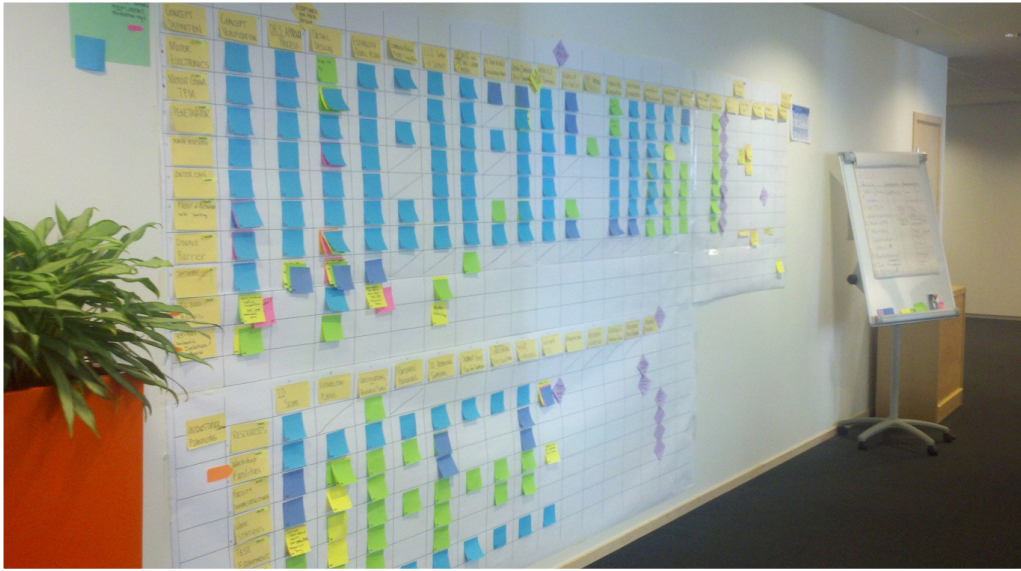
Visual project board along a <u>hallway</u> wall (first), and online (second), for collaborative project management. One clear visual display allows all project participants to collaborate on clear and common goals.

"You want it when?": Imposing a common deadline on disparate teams

Consider your deadline for project completion your date with destiny. Whether determined by customer contracts or set internally to help the organization manage work load and capacity, due dates and deadlines drive the entire project management process.

But in a distributed team environment, fixed deadlines become slippery slopes for a number of reasons:

- **Volume of information:** The amount of data coming from multiple sources can overwhelm your ability to form an accurate picture of on-the-ground activity. A growing volume of data can make it difficult to sort the important from the unimportant, clouding the decision-making process with trivia. As more teams face more data, competing assessments of importance create even more confusion.

- **Reliability:** How accurate are the timing projections? And what happens when they go wrong? Can everyone consistently identify the most critical dates – or do different teams focus on different deadlines? Just as important, are the distributed teams hiding information from leadership, delaying or withholding negative information in hopes that things will get better?

- **Inconsistent vision:** Most teams work within the "bubbles" of their own tasks. Who has access to the big picture, the way the tasks relate to each other – and the way one missed milestone might affect the others? The proliferation of tasks and teams can obscure visibility of the overall project, making task selection an arbitrary process among disparate teams, rather than a managed flow that synchronizes everyone together.

While these issues exist in every organization, they are amplified in a distributed environment. We know the haystack

syndrome (Goldratt, 1990)[1] makes finding the answers to our critical project questions (the needle) difficult even in our internal work group; in a distributed environment, we can't even find the haystack, let alone the needle. Therefore, in a distributed environment, we must take the word of the "invisible" team that they have found the correct needle. The project manager is then forced to sort and identify which among the various needles is the "correct" one.

Project managers are often given questionable delivery information. That's nothing new. In a local team environment, the project manager can quickly visit the work area to assess the reliability of information. This is of course, impossible for distributed teams.

We know that most project teams do not have a clear view of the workflow before them and thus, make decisions based on limited information. In a distributed environment, the additional barriers of time and distance make the path forward nearly invisible. Thus, local managers must impose their own deadlines based on a local understanding of the project priority.

Each of these has a common result: work is not complete when we expect it to be. This unpredictability exacerbates the difficulty of managing project execution, forcing additional management work to effectively control it.

In order for overall project deadlines to be met, project managers need a single, consistent window for seeing project progress across all of its elements and locations, in real time.

Such a window must provide the following:

1. Shared view of project status – insight into the project to identify the most critical tasks affecting delivery dates

2. Shared view of the obstacles impeding the delivery dates

3. Shared understanding of the work to be done to overcome those obstacles

In addition, they need appropriate, simple yet effective project management strategies (management processes) to leverage the shared views and understanding.

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1 Most of us are drowning in oceans of data, so why does it seem we seldom have sufficient information?

Real Success Among Remote Locations: Coordinating a Complex Supply Chain

In Norway, a manufacturer of subsea oil and gas technology found itself the victim of success: the company, FMC Technologies, could not meet the critical delivery dates for its new single phase flow meters. The problem? Each meter depended on key parts from five different sub-suppliers in different countries, which were then assembled and tested by two additional subcontractors (also in different countries). With the components spread all over the world, FMC found it impossible to coordinate all the moving parts into a single production goal – meeting promised delivery deadlines.

When projects are failing to finish on schedule, too often the response is to work on improving planning. However, the most important aspect of improving flow is to make the invisible visible to identify the bottlenecks that establish the tempo. The team at FMC Technologies created a manual visual project board and began new internal collaboration processes. They discovered a vendor for a key component was the bottleneck resource that was driving the delivery dates for virtually all of the units.

The visual project management was then moved to the Web and the collaboration activities included remote suppliers to synchronize to this critical supplier. With precise and real-time visibility into every link of the flow meter supply chain, the team was able to detect delays and take corrective actions before a problem at any single link in the chain threatened the entire workflow. As a result, flow and delivery reliability were improved with a quintupling of capacity, quadrupling of output, and a 23% reduction in lead time, resulting finally, in on-time and in some cases, early delivery.

> ""We have a feeling like working in the same company… We have learned our customer's people and processes, which eases the communication.
>
> During the project, we were able to focus on where we really needed it in the project/engineering process; finding the constraints and the key resources."
>
> *Supplier's Production Manager*

Basing promises on an enterprise-wide understanding of capacity

Clients and customers want to know: when can they expect their project to be complete? But an accurate answer is only as good as your understanding of the entire system's capacity – the number of resources available to address the volume of tasks at hand. Simultaneous projects, staff changes, different holiday calendars, and even vacation schedules can all contribute to an ambiguous capacity landscape.

Managers, operating at a distance, often work in the dark, making crucial capacity and resource allocation decisions by the seat of their pants rather than by the interpretation of empirical data.

Even the best capacity management schemes are exposed to failure because of:

- **Lack of Visibility** - It's difficult or impossible for managers to catalog all skill sets and resources from all regions into one comprehensive understanding of available talent;

- **Accuracy** - Suppliers often lack an accurate assessment of their own capacities, even if they're willing to openly share what they know.

> An accurate answer is only as good as your understanding of the entire system's capacity

- **Commonality** - It is often difficult to equate resources from different locations. Minor differences in the definitions that provide a basis for modeling resources (job titles, descriptions, roles and responsibilities) render resource planning models unusable or, at a minimum, unreliable.

When this landscape is spread across multiple locations, the complexity of capacity assessment is compounded by different understandings of capacity, resource schedules, work policies, time zones and local agendas.

> To reconcile capacity with workload, managers need visibility beyond the borders of their own projects

Additionally, multiple data sources result in data profusion and inconsistencies that make it very difficult to assess capacity availability and thus make accurate promises. The haystack syndrome prevents identifying the "correct" or reliable source of capacity and demand information.

To reconcile capacity with workload, managers need visibility beyond the borders of their own projects into the full sweep of the organization's project portfolio. Keeping promises, and containing anxieties, is much easier when project managers can rely on a tool that incorporates capacity and load data from multiple sources into one point of visibility. With access to the true load picture, managers can account for natural variability by making prudent adjustments, reducing the need for late-stage "heroic efforts" such as hiring new resources or adding overtime.

In order to manage remote capacity effectively managers need:

1. Common understanding of capacity

2. Common understanding of the work to be done

3. Mechanism to reconcile the two

Real Success Among Remote Locations: BP's Clear Communication of Capacity Accelerates Cleanup Activities

After the 2010 oil spill in the Gulf of Mexico, BP had the task of cleaning and releasing over 14,000 vessels. They had set up a number of sites to clean boats throughout the Gulf coast, stretching from Tampa on the east to Texas City on the west, each with different water depths, specialties and capacities.

"As we started to adapt, we began to realize that we were closing some old, inefficient sites even as we were opening new ones elsewhere," Kurt Golser, of Pinnacle Strategies said. "We decided to view the whole operation as a massive factory, with no roof over it and multiple work floors."

The new perspective allowed the our team to better see work blockages in the cleaning project, or the cleaning "assembly line."

The team decided to put the capacity bottleneck – the dock space – right in the cleanup system. This would allow streamlining and proper pacing of all other aspects of the cleaning.

They then spread out through the sites and designed a system to measure dock space use, providing uniform measures to be used by all contractors at all the sites. Site capacity utilization would be judged, initially, based on how much available dock space had a vessel in it.

Initial measurements showed the situation was not good. Only about half the space was used, leaving plenty of room to increase the rate of cleanup. At a typical morning management meeting at one of the sites, contractors from a dozen companies would sit around a table in an atmosphere so guarded it might seem to an outsider that they were working at cross-purposes. Each company, and often each employee, had different methods of communicating with superiors and team mates. Communication between teams – many of whom, once the cleanup was done, would again be competing with each other for work on subsequent jobs – had formed another bottleneck.

Workers and managers were given capacity utilization communications templates to ensure that information was reported the same way every time, and was available at a glance. Whiteboards with carefully planned progress charts became ubiquitous and reports were written daily on the cleaning status of each boat.
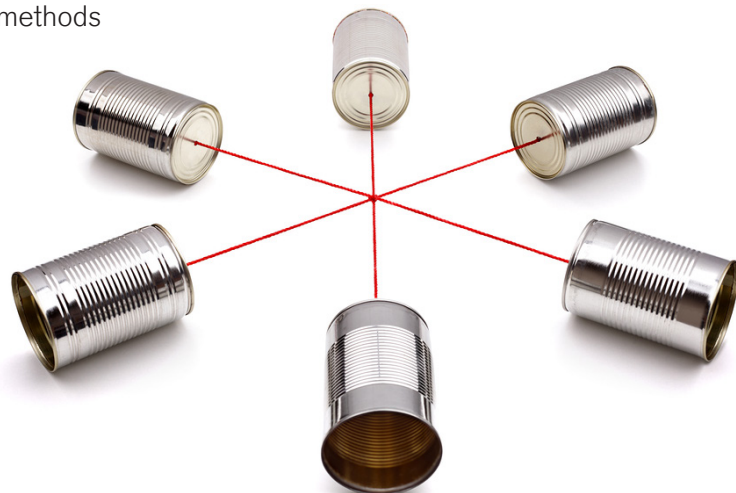
"The template for communications had a significant impact," Kurt said. "If you increase the communications flow of capacity information by 50 percent, you can easily find ways to increase throughput by 100 percent or more."

As a result of the rapid communication of capacity and its utilization, critical actions were taken that boosted the rate of vessel cleaning and reduced the cost of the cleanup activities. The end result was the project was completed in a third of the time and hundreds of millions of dollars under budget.

> **"The template for communications had a significant impact,"**
> **Kurt Golser, Project Manager**

Making realistic risk assessments

No matter how good your plan may be, in execution, managing schedule risk is essential to project success.

Traditionally, project managers have tried to reduce risk by projecting completion times for projects based on the sum of individual task completions in the critical path. But these task completion times are suspect. When they ask for time estimates, teams tend to add "safety" time that anticipates setbacks. In themselves, these safeties are relatively benign (in fact, the need for safety time is essential), but when added together, the collective times make the project much longer than it needs to be, clouding the actual schedule risk and adding unnecessary delays to project completion.

Worse, to the degree that resources determine their own safety buffers, management has lost control of the project. The project team loses a clear view of the project; they cannot distinguish between the work and the safety. The management team then must either react conservatively to keep everything on track (forcing unnecessary overtime and expediting) or wait until the situation is clarified (often reacting too late, which pushes the delivery out).

During execution, the project team cannot get an accurate view of the work to be done; they have a fixed delivery date, but the path to that date is obscured because the component tasks are not well understood, nor are they appropriately aligned to the project managers' goals. Dispersed teams are then forced to make educated guesses about remaining work and schedule realism; the real risks to delivery remain unseen.

Assessing schedule risk is always challenging, but remote locations make assessments even more difficult:

1. Distance insulates leadership from the problems encountered throughout the project, impeding their ability to assess real progress

2. Without a timely way to communicate and share true progress, obstacles cannot be identified in a timely way

3. Distance obscures the actual work required and the uncertainty of on time completion of any task in the project

4. As communication breaks down, different teams have different ideas about risk and work, further obscuring the work picture

5. Local variations create confusion about what is or should be reported, impeding clarity

The general solution to the schedule risk management problem is to gather estimates of the most likely task durations *without safety* from each task team. (These estimates don't need to be perfect to be useful.) Then assign a margin of error *for the entire project*, a consolidated project "buffer" approximately equal to half the critical chain (typically smaller than the sum of the individual safeties), thus reducing the planned project duration time. Now restored to a position of visibility and control, the project team distributes the buffer to various tasks *as needed*, applying resources to those task challenges most likely to threaten overall project goals.

During project execution, task completion and buffer consumption are tracked collectively on a daily basis; the project manager is able to make an accurate assessment of schedule risk and rapidly respond appropriately.

For example:

- **Green light:** If a given team has completed 60% of its critical tasks and consumed 50% of its buffer, risk is *low* – the work is on-track to meet its deadline.

- **Yellow light:** When the buffer begins to be consumed at a rate faster than the critical task completions (e.g., 50% of critical tasks complete, but 60% of buffer consumed), managers are warned of the risk and can take measures to resolve issues before they become problems.

- **Red light:** But if a given team has completed just 45% of its critical tasks and used 70% of its buffer, the work is clearly at risk of not meeting the deadline. When managers see this kind of disparity, they can rapidly redirect resources to the at-risk tasks, reducing the impact on the overall project.

When buffers are centrally managed, projects are more likely to meet deadlines without allocating extra budget dollars to overtime, expediting efforts, or additional people.
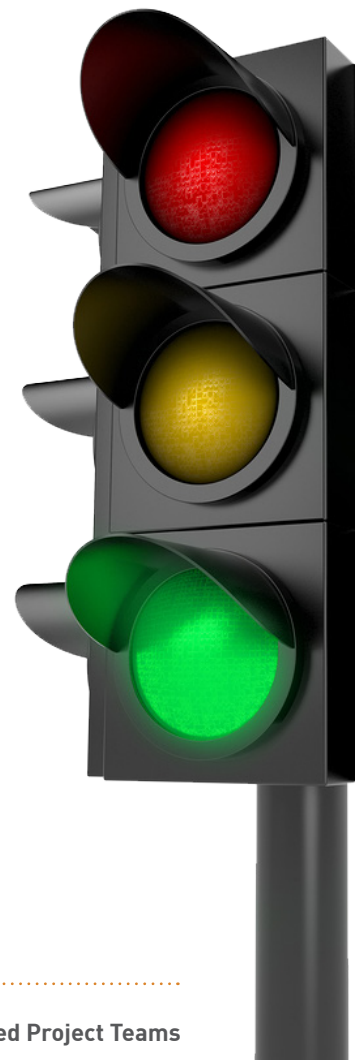
To master risk, distributed teams need to:

1. Develop a shared understanding of the work and the safety

2. Report the remaining work durations of individual tasks

3. Measure work remaining versus buffer remaining

Real Success Among Remote Locations: Air Force Shuttles Buffers to Meet Battlefield Demands

For the United States Air Force, urgency was defined by the most extreme conditions possible: American forces on the ground waiting for new weapons systems. During Operation Desert Storm Air Force project managers oversaw three new eagerly anticipated "smart weapon" projects. Each of the three project managers, working from different locations, were overwhelmed by the pressure to meet wartime demands and insisted they needed additional resources to meet their deadlines.

In the end, they took a different tack. Instead of adding resources, they linked the three projects into one portfolio with one resource pool and clearly visible buffers.

At the beginning, because each effort was managed from different locations, each manager's vision was limited to his own work. But with the appropriate collaboration tool in place, workflow management was put on an objective footing. Each project manager was able to see and understand the total work in the system and the risk associated with the project.

To get an accurate picture of project progress, the resource behavior needed to change, too. Resources responsible for a task changed the way they reported the work from percent complete to how many days they would need to complete their assigned activities. This removed the uncertainty for the critical tasks and clearly showed where the schedule risks were.

In this new environment, priorities were determined by expectations from the war zone, and buffers were allocated based on the true need. The project work remaining and the amount of buffer remaining served as a measure of risk and allowed each project activity to be objectively prioritized. As a result, all three projects were successfully completed on time, none at the expense of the others.

Conclusion

Can everyone see the big picture?

When projects fail, the number one of the major causes that Project Manager point to is poor communications. The four scenarios we described all share a common theme: weak communications threaten workflows and project progress; when project teams are distributed among remote locations, the consequences of poor communications, and the risks to project success, become even greater.

Yet even the most far-flung resources can work together as an effective team – if they have the means to share, collaborate and communicate in a timely and inclusive manner.

Does your organization have what it needs to coordinate remote teams effectively? Consider the following questions:

> When projects fail, the number one culprit project managers point to is poor communications

- Can managers see beyond their own tasks and into the larger project?

- Do resources set their own "safeties" or are buffers controlled by one responsible manager?

- Can you allocate buffers and resources empirically rather than by arbitrary demands?

- Do you have an integrated means of visualizing all the aspects of a project?

- Are your customer promises based on objective data everyone can see?

- Can you coordinate remote teams around one common purpose visible to all?

- Do you have an effective way of meeting, communicating, and sharing

information regardless of location?

- Are your key resources overwhelmed by conflicting demands on their time and talents?

- Can your organization balance capacity and load through the entire workflow?

The more affirmative responses you can make to these questions, the greater your ability to master projects among remote teams anywhere. To learn more about an effective and efficient way to facilitate team collaboration, a coordinated system that allows managers to see and manage all project elements through one clear "window" of visibility, contact us to arrange a complimentary best practices briefing.

About Mark Woeppel

Mark help scompanies that build things produce them faster and more reliably. Expert in project execution and Theory of Constraints. Author of the Manufacturer's Guide to the Theory of Constraints, Visual Project Management, Projects in Less Time; A Synopsis of Critical Chain, Breakneck to the Bottleneck, and numerous eBooks and white papers on the topics of project management, production management, and process improvement..

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