



The Five Elements of a Project

A Clear Definition of a Project

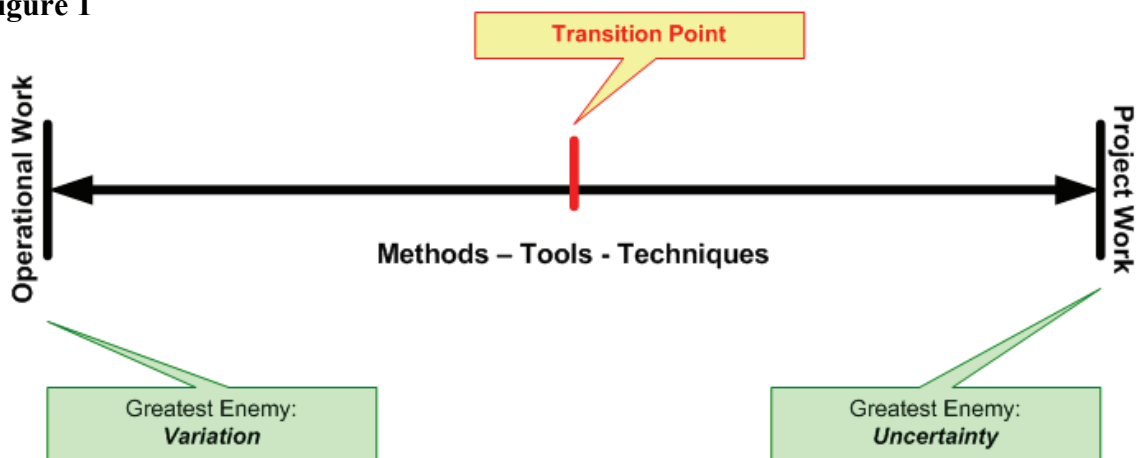
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In order to understand project management and project leadership in general it is imperative to first define the term “project”. If we examine the Project Management Body of Knowledge (PMBOK) we find a project defined as, "A temporary endeavor." However, I find this definition incomplete as it allows too many elements of work to be classified as a project. In this article, I will attempt to define a project more precisely so it can always be known when one is encountered.

Why is it so important to know when we have a project? To answer this we need to understand the two types of work performed by organizations, project work, and operational work.

Figure 1



Organizations perform two types of work; project work and operational work.

Operational work is the repetitive work of the organization. It is the work we perform day in and day out in the same way. Examples of operational work include payroll, manufacturing, and recruitment. These jobs must be done repeatedly every hour, day, week, or month. Operational work is what keeps the organization in business. It is stable, unchanging, and keeps the doors open for business. Without operational work, the organization won't survive; it's the glue that holds the company together. It provides the efficient functions that allow the company to provide its products and services to the customer reliably over time. Operational processes are well defined and documented so they may be repeated identically every time.

The critical factor in operational work is the need to perform these duties with as little variation as possible. As noted by Deming, Juran, Lean, Six Sigma, and countless other initiatives and experts, the biggest enemy of operational work is variation. In fact, the most concerning management issues in an operational environment is the reduction and control of variation. If it were possible to eliminate variation, operations would be perfect. The tools, techniques, and methods of operations are designed to reduce and control variation.

Just how intense is this desire to control variation? A few years ago, Dell Computer had a press release bragging about the reduction of one process by $\frac{1}{4}$ of 1 second. For this company, a reduction of such a small degree was a huge event. Perhaps you recall a commercial that ran for some time having a young man running through his company screaming “We saved a nickel, we saved a nickel!” at the top of his lungs. Can you imagine being so excited over saving a nickel?

On the other hand, project work is defined by its uniqueness. That is, the work of a project is work that is not accounted for in the operational procedures and processes. It is work that is done once, or only a few times, and then your finished. Project work is usually not repeated in the same way for the same customer under the same conditions. Since variation is the measure of the difference between each trial, and pure projects are only done one time, the work is not repeated enough times to make the measure of variation meaningful. So, what is the biggest enemy of project work if not variation? It is uncertainty. Like variation in operations, our goal is not to eliminate uncertainty but to reduce and control it. We can never eliminate uncertainty but it can be managed. The tools, techniques, and methods of project management are designed to reduce and control uncertainty.

Project work is the only way organizations grow. While operations keep the organization as it is, project work allows the creation of new products and new services. Without projects the organization cannot grow to provide new services and would eventually become irrelevant. As can be seen, without project work the organization is sterile and will eventually die. Without operational work the organization will implode and eventually die. Therefore, organizations require both types of work to survive.

The reality is we rarely ever encounter “pure” projects. Most projects performed by a particular organization are very similar to past projects. This means some of the work performed during projects is operational and some is unique. As projects end, many of them become operational. For example, we may do a project to improve a business process (operational work). When the project is done we must transition the work from the project into operations. This also implies that operational work cannot remain static forever. There will be times when operations must be changed and updated. Project management is the method of change. Therefore, to change the process we rely on projects, when projects are done we rely on operations. We must then, know when to switch our tool belt from operations to projects and from projects to operations. At some point the work reaches a “transition point” (see Figure 1) where we change our tools. If we continue to use operational tools when we require change, we will struggle or fail. If we continue to use project tools when we require stability, we will struggle or fail. The smart manager knows when they have reached this transition point and uses the appropriate tools.

Given the above, how precise can operations predict how long it takes to create the next product on their production line? Very precise, (apparently to the ¼ second). How precise are they in determining the cost of the next item? Very precise, (apparently to the nickel). Do you think they know the level of quality of the next item? How about the required materials and machines? All of these items are tightly controlled and pre-determined in operations.

Let's now consider the same questions for a project. Do we know how much it will cost? Never. At best we have (at least at the beginning) an estimate that is wrong by up to fifty percent. Do we know how long it will take? We may have a wild guess but all we truly know is that our guess is wrong. How about the quality of the product when we're done? Since the product is unique, we have no idea if it will be of high quality or not. We may not even know if it will work at all. In the same way, we don't know all the materials required nor the machines needed to perform all the work. So far, it doesn't sound good for the project manager.

Now imagine you are going to present your initial project plan to the sponsor and executive committee. You feel prepared but the meeting before yours presented an operational issue bragging about saving ¼ of 1 second off one process in addition to saving a nickel. You now present your plan stating you will complete the project somewhere in the third quarter (give or take a month) and the cost will be about \$600,000 (give or take \$100,000). At this point, you appear to be completely incompetent. You are directed to revise your plan and make it precise. You need to know that most of the executives and sponsors (with their MBAs) have been trained to think in terms of precision, that there must be an exact cost and time associated with all work. How can we compete in a world of precision when we are, by definition, working from a base of imprecision? By using the right tools, at the right time, on the right work.

In this article, I will discuss the five elements required to have a project. When these five elements are present, the tools of project management (tools to control uncertainty) will work. If any one of these elements is missing, the tools are not appropriate.

Project Element #1 – Unique

As already discussed, projects are unique, one-of-a-kind, never been done before. It's important to know what it means to be "unique" if we hope to separate the common from the uncommon. In the performance of a project, there is an enormous amount of work to be done. Some of it will be unique and some of it will not. The tools of project management are designed to control and manage the uncertainty inherent in projects. We must therefore, separate these two types of work and apply project tools to the unique work and operational tools (when required) to the common work. Of all the work required to bring a project in on

time and on budget only some portion of it will be unique (see Figure 2).

Only some part of all the work required will be unique and therefore “project” work. The rest of the work is operational work. We must apply project tools to project work and operational tools to operational work.

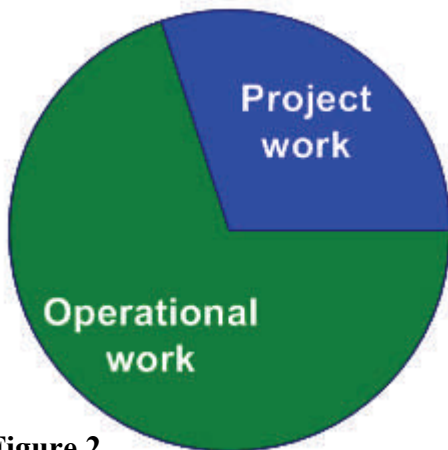


Figure 2

For work that is operational, we need not plan it with any detail. The detail is already captured in the standardized processes. Imagine if you kicked in the doors of finance and announced that you have a new project and have a list of the people on the team. You will therefore be taking over the responsibility of payroll for these people for the duration of the project. After the finance department finished rolling on the floor, they would most likely kick you out. Even if they agreed, it would be a foolish approach. Why would you want to take on work that is already well defined? For work that is already operationalized

our plans would simply ignore it or put it in our plan as a single line item. The “project” only plans for the unique work.

Project Element #2 – Start and Stop Date

Projects must have a definite start date and stop date. There is nothing as absurd as hearing a company that has an “ongoing project.” There is no such thing. This is important as the start and stop date define the life cycle of the project. Everything born eventually dies. Everything has a lifecycle. By knowing the lifecycle of something we also know a lot about it simply by knowing where we are in that lifecycle. If we were to prepare a presentation, we would be influenced by the age (point in the lifecycle) of the audience. We would prepare differently for a group that is 10 years old versus 40 years old. We can pre-determine much about our audience based on where they are in their lifecycle.

When receiving a new project consider the most pressing question at that moment. You want to know “What” you are being asked to create. Answering this question requires nouns. We must identify what we are being asked to create. We may state we are building a house, race car, or software application. In any event, it is the identification of all the nouns or things we are to create that determines our project. However, knowing “what” we are going to create is not adequate; we must also know the requirements for each thing. That is, we must describe the “what” in enough detail that we can feel confident in creating it. We use adjectives to describe our nouns. We want a “red house,” “fast car,” and a “responsive application.” The more adjectives the better we understand the product of the

project. These are known as “requirements.” The outputs of this phase are the scope statement and requirements.

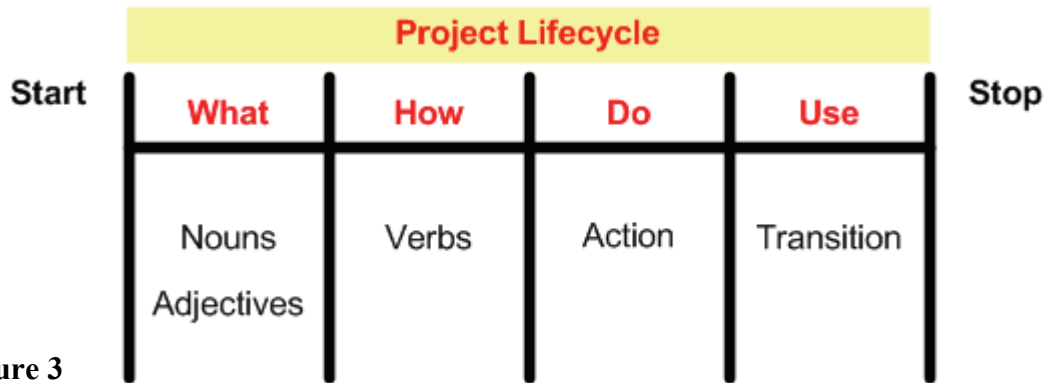


Figure 3

Another key aspect of this lifecycle is team development. During this phase, the team is just beginning to form. There is a brief period of politeness followed by conflict (storming). As the project leader, we must be prepared to deal with this conflict effectively.

Once we feel confident in “what” to create the next question is “how will we create it?” what are the steps, who will do them, when will they be done? This phase is characterized by the verbs that describe the actions required to create the “what.” When completed, this phase has the schedule as its primary output. At this time, the team should have come together and they are working together as a team (“norming” and “performing”).

Project Element #3 – One Accountable Entity

Unlike operational work, where separate managers are accountable for different parts of the work, projects have only one accountable entity. Accountability implies someone that has both the responsibility and the authority to do the work of the project.

Because operations have clearly defined and segmented work that is repeated over and over it is possible to have separate entities accountable for each section of the work. This control comes through the well defined processes that drive the work. In projects, there are few well defined processes for the work (actually, the processes of planning and managing a project are operational while the work of the project is unique). The project plan represents the best effort to create a one time process that will have many missing parts. Such uncertainty requires one person to have full accountability for all the work of the project. This does not mean the same person must remain the one accountable entity for the entire project. Some people are very good at getting the team organized and planning the project but fail when it's time to drive the details of daily work. Feel free to change project leaders at each phase if it's necessary. If you intend to change leaders at strategic points in the project make sure everyone knows up front to prevent rumors of leadership failure.

Now that we see why we need one accountable entity let's define the term. Accountable means to answer to somebody for your actions. Responsible means someone who has the confidence to boldly state, "Fire me first" when things don't work out. The accountable entity knows the phrase "the buck stops here" and provides no excuses for failure. It means to be *responsible* and have *authority*. Being responsible is the "no excuses" part of the job. Authority means to be able to make sound decisions that guide the project. If the accountable entity is unable to make decisions, he cannot manage the project.

There are two key questions that must be answered concerning authority: authority over what? and how much authority is enough? Project managers complain about not having enough authority but cannot answer these two questions credibly. In the next section I provide answers to these questions.

Project Element #4 – Definitive Prioritization of the 3 Trade-Offs

When doing the work of projects most people are aware of what has been termed the "triple constraints" of project management. The iron triangle has been defined as time, cost, and quality (or scope in some texts). Once again, I find this definition incomplete. The preferred labels are *time*, *quality*, and *resource expenditures*. The reason for this difference will become clear as we progress.

Let me define each of these terms. Time and Timing are different. Time means the absolute time of the project, a specific moment, such as starting the Olympics, you cannot be late. Regulatory projects and many competitive product launches may be driven by Time. Timing includes projects that are not necessarily driven by the end date (although this could be part of it) but are driven by the close interdependency in time from one task to the next such as mixing and pouring concrete. This factor can only be number one if the end date of the timing of each task is the most important part of doing the project, otherwise it falls to number two or three in importance. It's hard to imagine an internal project that is not regulatory requiring Time to be the most important factor of a project. Unfortunately, many projects are given short deadlines in the hope of forcing the project to be done faster. This is ludicrous. It may work once but people are not idiots. They will quickly discover they are being made fools of and no longer give such deadlines significance. You will soon find yourself in the dilemma of the boy who cried wolf.

Quality is often misunderstood and has as many meanings as there are people defining it. Generically, quality is what the customer says it is. It means to give the customer what they *expect*. This means we must be careful not to build up the customer's expectations falsely. It's far too easy for us to make promises that we cannot keep and thereby build the customer's expectations beyond our capabilities. A misnomer for quality is scope or grade. Scope is the feature set of the project. The more features the greater the scope. The scope of the project should not be a prioritized issue. Scope is a function of time and money. If the

client has the time and/or money then we can add scope, otherwise we reduce scope. Quality becomes the number one factor when the client wants the product or service to be exactly as specified. Consider the product Microsoft Word. Is this a high or low grade (feature set) product? It's obviously high grade. There are hundreds of features. Now consider the quality of the product, high or low? The quality of Word is somewhere in the middle. I wouldn't classify it as high quality by any stretch. It crashes and misbehaves endlessly. However, it does work most of the time. It's well known that as grade increases, quality becomes a bigger challenge. The more features a product has the more difficult it is to ensure all of those features work as promised and expected. The converse is true as well. The fewer features a product has the easier (usually) it is to make sure they all work. Adding features increases cost and the challenge of making all those features work. In addition, it takes longer to create additional features. Grade or scope is therefore determined by, or determines, the three trade-offs but is not a priority itself.

The last of the three trade-offs is resource expenditures. There are four types of resources available: men, machines, money, and materials (the four M's). "Men" includes the human resources of the project. Machines are the resources used for a project that still exist after the project is over such as trucks, meeting rooms, robots, and so on. Materials are the required resources that are used up or transformed during the project. Last of all is the resource that project managers pay the most attention to during projects, Money. However, this is only one resource not the only resource. In fact, for many projects there is no real money involved. Internal projects use peoples time but not real money. The Monopoly money assigned to projects for internal resource time is not real money and should never be treated as such. That money would be spent if the project was done or not therefore, it is not the project that costs this money. The only money assigned to the project is actual dollars that would not have been spent if the project was not performed. This includes special consultants and contractors used for this project. Resources can be traded for one another and that is why they are lumped into a single category. Resource Expenditures become the number one factor when we are limited in our use or the availability of any of the above.

To qualify as a project we require the three trade-offs to be definitively prioritized. This means only one of these can be number one, only one can be number two, and only one can be number three. There can never be two of equal value.

Consider what happens when you tell the sponsor you need to have the trade-offs prioritized? What is their response? "They're all important, they're equal." Let's take a moment to prove that no two priorities can ever be equal. Imagine that it's the last day of the project. You are to deliver tomorrow. However, there is a problem. The product is not up to standards. You go to the project sponsor and inform him of the problem. You tell him it's either deliver on time below quality standards or deliver late to standard. Are you then told, "You have to do both"? No. At this point, such a statement is absurd. The sponsor must make a choice. He won't like it but he must. As you can see, the sponsor will choose either quality or time at that moment. One of the two will be most important at that time and only

one will win. This is the most important, or the highest priority of the two.

So, why is it at the start of the project when you ask the sponsor to prioritize them definitively they make the ridiculous statement that they are all equal? Again, it's to hedge their bet in the hope they will get more by demanding everything. Even if this is true, the sponsor will never know what they will get. They have increased the variation of responses by the project team. When everything is important, nothing is important. By hedging they are actually damaging the entire project. It is our responsibility as project managers to not allow such behavior. We must get the three trade-offs definitively prioritized or not do the project.

It should now be clear what authority is needed, we need authority over the three trade-offs. Let's examine how much authority is required to manage the project. If you were to pay a contractor to rebuild your kitchen and you had only \$30k to spend and no more, how much authority would you give the contractor over budget (resources)? None. Your project sponsor is no different. They will give you little or no authority over the most important of the three trade-offs. If you give no authority over budget you must give some authority over the remaining two (time or quality) to the contractor. Let's say you decide you want the best possible job for your money so you make quality number two on your list. You now must decide how much authority (decision making power) over the quality of the job will be delegated. This will affect the contractor's choice of materials and where to cut corners. You may tell him you want real wood and stone, the best he can get for the money, and he can cut corners in non-visible areas only. This automatically places time on the bottom of the list. The contractor will be able to choose the best time to begin and end the project and may even take a short break in the middle to use his resources in other areas that are more profitable if needed. He may wait until high quality materials are available for special prices to keep up quality and control expenses. Now the contractor can devise the best strategy for the project. As you can see, if you were to change these priorities mid-way through the project it would have a huge impact on the contractor's strategy. To suddenly come to him and say you have more money so you want a better job might cause unused inventory, misplaced resources, other jobs might be compromised, and so on. It would be unfair to the contractor and cause your project to suffer more problems than if you left the original strategy intact.

The prioritization of the three trade-offs is a decision-making tool. Consider your past project meetings. What was the root of most conflicts and arguments in those meetings? We need more time, more money, more people, the product doesn't work, and so on. In other words, most of the conflicts are related to the three trade-offs. When these trade-offs are definitively prioritized these issues evaporate. If there is an argument over whether to spend more money or take more time the trade-offs make this decision clear.

Project Element #5 - Agreement

The final element is having agreement between the sponsor and the project manager on all of the above items. This agreement is often a signature on a charter documenting the above or it may be as simple as an email confirming agreement. Since our authority comes from above in the organization it is imperative that we get formal recognition as the project manager and given the appropriate authority.

About the author

Allan Elder is the president of No Limits Leadership, Inc., a consulting firm dedicated to helping organizations deliver more projects, faster, through effective leadership. Allan has worked as the director of MIS for the second largest corporate insurance firm and the largest private security company in California. Allan has been certified as a PMP, is a Theory of Constraints “Jonah,” holds a B.S. in Telecommunications, a Masters in Project Management, and a PhD in Organization and Management. In addition to his consulting work, Allan is a lead project management instructor for the University of California, Irvine, has consulted and taught for the UCI Graduate School of Business, and was a Senior Examiner for the California Award for Performance Excellence (CAPE) for three years. You may contact Allan at aelder@nolimitsleadership.com.