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Constructing a project strategy



Technique sheet

Problem-based learning resources

Introduction

An engineering project is a complex thing. A large project can have thousands of people at work, deliveries from all over the world, unexpected changes in design to deal with difficulties that turn up onsite and just bad luck with everything from the weather to an outbreak of an illness like COVID 19 in the workforce! If you want to win don't start anything without a clear strategy to see it through!

What is the difference between a strategy and a plan?

A strategy deals with the 'big picture' view of the project. It is less concerned about details and more concerned about the purpose and overall direction of the project. If strategy is about the overall goals and vision of the project, planning is about how to deliver the things that will meet those goals. A strategy without a plan gets nothing done. A plan without a strategy gets lots done – but not necessarily the right things!

- Make sure you construct a strategy that describes the purpose of the project before you start detailed planning for individual tasks. Make sure you are doing the right jobs not just being busy!

What is the context for this work?

A strategy always starts with a review of the context of any proposed project. For example,

building a cliff railway has a physical context including factors like the location where it will be built, the slope gradient, the proposed track length and even the climate (do the cars need to be protected against very low or high temperatures?). There is also a financial context – what is the budget for the work? How many people will be travelling in a year (which gives you income from tickets) and do you need to use complex, expensive materials or technologies?

Some features of the work will be fixed – the slope of the cliff or the prevailing wind are obvious but the company funding the construction may insist on a particular energy source (e.g. electricity or gravity), size of carriage or even insist the tracks must make minimum contact with the cliff face as it is a site of environmental value. You have to know what these fixed or 'given' requirements are and take them into account when you create your plan. It's also good to find any options you have – maybe the funder would accept a lift for a steep cliff rather than an inclined railway?

- Make sure you understand the context of your problem before you start. Don't solve the wrong problem because you haven't understood the right one!

What does success look like?

What will a successful project look like? Would a cliff railway that only ran in dry weather be good enough? Think about the quality of the final product – how well will it do its job? Develop

specifications for the railway's structure and performance so that these can become your success criteria. If the railway performs in this way then it is a success.

- Make sure you describe success criteria for a job that reflects the original problem – not just what you can do easily!

When does the planning start?

The first three stages in Codifying the problem means that you should understand the problems or opportunities in designing and building your cliff railway. Now you get to start planning!

Planning is about delivery – how can you ensure that you design and build the cliff railway to the correct specification and budget in the time available? And keep those success criteria in mind.

- Make sure you keep a view of the big picture as you dive into the details of the plan.

What happens when things start to go wrong?

You know that things don't always work out to the plan you start with! Delays or changes to what is needed can occur. Some equipment might no longer be available or the people you need to install the complex electronics might be double-booked (even if you agreed dates with them in advance!). Problems happen! And many of them are not predictable at the start! You need to keep a close eye on the project progress and exactly how you are going to do that should be part of your overall strategy. Do you need regular meetings? Yes! Book them in early and make clear what data you need from them to monitor progress. You don't need to panic when things diverge from your original strategy but do react quickly enough to stop minor inconveniences becoming big problems. Your strategy should have some ideas in it to respond quickly and without drama – if things are going wrong have a plan to solve them – not just shout and blame everyone else!

- Make sure you have some contingency plans in case things start to go wrong. Thinking in advance, and building these ideas into your strategy, mean less hassle for everyone.

What about the annoying admin, rules and regulations?

Few people like paperwork and form-filling. Your strategy should reduce this to the minimum (don't collect data you will not use) but devote time and effort to getting it done. You need to know what is

going on and those annoying forms can help you, and your colleagues, keep up to speed on the key information. NEVER forget health and safety – it may be tempting to cut corners, but this can lead to major problems and even lawsuits.

- Make sure you plan for the admin for the project. Build in time and resources to do these and take it seriously.



Check yourself

You should be able to answer these questions easily after reading this sheet.

1. What is the difference between a project strategy and a plan?
2. How can success criteria help to guide your plan?
3. How can the strategy help when unexpected problems mean the planning needs to change?



Taking it further

These activities will deepen your understanding of this topic.

1. Think if a big project you would like to do – it can be anything even building an ocean-going liner, designing a space rocket or looking at what you could do to improve work conditions for yourself, your colleagues and even your employees. Just make sure there is some complexity in the project. Now develop an outline strategy for progress, you don't need to add lots of details but consider:
 - what is the context in which you will carry out this project?
 - who has an interest in it – the users, the funders, other people who will be affected?
 - what's the point of it – the over-arching benefit that the project will deliver?
 - how will you deliver this benefit? who will deliver it? what knowledge and skills, equipment and materials will they need? how will you assemble, and manage, the team?
 - how will you monitor progress and how could you respond to any unexpected problems?