**NB Will see this content in Exam + ST**

The Management Spectrum

The 4 P’s:  
**People:**Who you want:  
-Someone who can work in a team.   
-Someone who is motivated, well trained, and gets things done. **Product:**   
**Project:**   
**Process:**

**The Stakeholders**

-Senior Manager (Product Owner – person who defines the business issues that often have a significant impact on the project): People directly involved in project, not just upper management.

-Project Manager (Scrum Masters or Team Leads): Person who plans, organising, arranging, co-ordinating the practitioners.

-Practitioners: The people actively developing the software.

-Customers: Person who specifies requirements for the product.

-End Users: The people who use the software when software is in production.

**Team Leaders**

Model the way  
-Leaders practice what they preach.

Inspire the shared vision  
-Leaders recognise that they cannot lead without followers.

Challenge the process  
-Leaders must take the initiative to look for innovative ways to improve their own work and the work of their teams.

Enable others to act  
-Foster the teams collaborative abilities by building trust and facilitating relationships.  
-Be willing to listen to what the team members are saying.  
-Must be able to trust team to do their work well, but also to know when to say no.

Encourage the heart  
-Celebrate the accomplishments of individuals.

**W5HH principles (5-7Q) They we need to know off by heart** **NBNB in ST test**

**Factors to consider when building a software team**

-How difficult solving the problem will be

-Scope of the program(s): backend vs frontend eg

-Time that the team will stay together: If you know people don’t like each other, don’t put them in a team for a year.

-Degree in which the problem can be modularized: Do you have small teams, or one big team

-Quality and reliability of the system to be built: For something very important, you have someone qualified/trusted to work on it.

-Rigidity of the delivery date: How flexible is the deadline – can have a huge cost impact for money + reputation + time. Most projects are meant to improve/expand revenue… so late = missed revenue.

-Degree of sociability required for the project: Communication to customers, team leads, team members ect is very important.

**Factors that foster a potentially toxic team environment**

-A frenzied work atmosphere: If you constantly fear a fight, always walking on egg shells.

-High frustration that causes friction among team members: When there is a problem that is constantly causing issues and is not getting solved… ie constantly trying to fix the issue but making no problem, leads to aggregations.

-A fragmented or poorly coordinated software process: eg Initially using waterfall, but halfway through stop, and do parts of each thing

-An unclear definition of roles on the software team: You can waste time not knowing what to do, can have territorial members. Hierarchy’s can make a big difference

-Continuous and repeated exposure to failure: This can lead to High Frustration + friction among team members. An easy win can be a great motivator.

**Now the product, as the product manager**

-Understanding the problem. You have to try and estimate the costs + time such a product till take, but such detailed analysis takes very long (can take weeks-months).  
You don’t really know how long things will actually take.  
The more information you have, the better your estimate will be.

You know that during the project, **requirements** will always change. Cant predict when change will happen. You must control the change so it doesn’t effect deadlines.

**Software Scope**

-Context: understand what you are developing, what you are trying to solve.

-Information objectives

-Function and performance

These 3 allow you to set up the initial requirements for the project. Will allow to setup the software process, which model is best.

**Choosing a Process Model**

**1)** The customer who has requested the product and the people who will do the work  
-You might not want waterfall as customer feedback is only at end

**2**) The characteristics of the product itself  
-Banking can’t be agile, must be something robust like waterfall.

**3)** The project environment in which the software team works.   
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Use the right tools, for the right job

**Characteristics of successful software projects**

**1**) Clear and well-defined requirements accepted by all stakeholders.  
-it is important that everyone’s on the same page

**2)** Active and continuous participation of users throughout the development process.

**3)** A project manager with required leadership skills who is able to share project vision with the team.  
-The leader will be held responsible at end, so its important to make sure team understands requirements

**4)** A project plan and schedule developed with stakeholder participation to achieve user goals.

**5)** Skilled and engaged team members.

**6)** Development team members with compatible personalities who enjoy working in a collaborative environment.

**7)** Realistic schedule and budget estimates which are monitored and maintained.  
-Estimates are extremely difficult

**The W5HH Principle**

1) Why is the system being developed?  
- Is there a reason for the system to exist? All stakeholders must align on this.  
-What will be done.

2) What will be done?  
-The requirements are well defined

3) When will it be done?  
-Ghant chart  
-Establish a project schedule with milestones

4) Who is responsible for a function?  
-Delegation of tasks  
-The roles and responsibilities of each team member is well defined.

5)When are the located organizationally?  
-Not all roles located at same location: from remote work, customers, users, stakehoulders.

6) How will the job be done technically and managerially?  
-Once project scope established  
-It is important to decide on the tools you will be using

7) How much of each resource is needed?  
-If you under budget, you will have to ask for more money which can be a problem.  
-The answer to this question is derived from previous estimates from earlier questions