

# Applying management theories

Business, Management



Company A was initially formed as a group of engineering students to undertake the project of modifying and coding a Boot to automatically move around a maze as quickly as possible. The group was formed by Dry S. Watson, the project supervisor. The group consisted of four students: J. Peters, A. Shabbier, A. Mohammed and O. Added. The students began their project through the organized Company 1 meetings. In their first meeting they were introduced to each other, though J. Peters was absent, which disadvantaged him later in the project.

The group cited that their first action would be to organize a group meeting in the week, before the next company meeting, a good pro-active decision. It was observed that no leadership took place in the group with everyone inputting questions that the group could not answer. The Part D students were then able to answer some questions. In the meeting the group did not discuss project strategy, but discussed sensor systems, there was no clear sensory system decided with A. Shabbier wanting to research into sonar systems and A.

Mohammed continuing research into IR sensors and QUIT sensors. Over the next two weeks the group began to realize their task and formed their project structure based on the diagram, [ Figure 1 ]. The strategy overall was carried out well throughout the group, as they became more aware of mistakes that may have occurred without the plan and check stages. Once the strategy was in place, the Plan section was implemented. Within the plan stage the group took into account the following factors for equipment choice: Cost, Complexity and Acceptability.

An example of this method was the choice of sensors, the group decided to use IR sensors, as they were cheaper than sonar systems, they were the easiest complex of all the systems and achieved the groups' requirements. This decision making process was very powerful, as it gave the groups specific criteria that they had to uphold and it prevented members from verging off topic, which they were prone to doing. Figure 1 - Plan check do act (PICA) model A main failure of the group however, was that they did not choose a project leader.

Their failure resulted in a leaderless structure to the group, immediately disadvantaging the group, as there was no one to make key decisions. This can be seen by tensions formed in the group with regards to sub-systems. The group decided to create sub-systems and allocate a person per sub-system, though this was a sensible systematic approach (though it could have been improved by using a job design chart, such as in [ Figure 21]). Breaking down the sub-systems affected the group with some tasks much simpler and straight forward than others. This process led to J. Peters and A. Mohammed wanting the same roles.

The decision was made by the rest of the group that A. Mohammed would be better suited to the desired role. J. Peters had little contact with the group up until that point and this showed in the groups' decision. J. Peters was left with the difficult task of producing the interim report for the group. This was a poor decision by the group as it meant that they also arose from the sub-system approach, where during one week; more than one member of the group was absent. This led to a halt in progress of the project in the

areas where team members were away, as absent team members knew their role, but the other team members did not.

This should have been factored into the projects' risk contingency plan; however this was yet to be created by J. Peters. This failure resulted in a week without progress and certainly created tension not only within the group, but between the group and supervisor as well. A better strategy would have been to split the design into sub-systems, but within each sub-system, tasks could be created and given to members of the group, allowing more than one group member to have knowledge of each sub-system to ensure progress continues.

What sequence? Who else? How to interface with the facilities?

Environmental conditions? How much autonomy? Skills? Where to locate?

Tasks? Figure 2 - A Job design chart, enabling users to identify each role

After the fourth week it was clear that A. Shabbier had taken charge of the project, which could be a positive factor of not immediately selecting a group leader, as it allowed time for the more dedicated person the project to take control, effectively becoming the natural leader.

His indecision however, led to a long delay within an exercise the group carried out. A requirement that the group made was to increase the speed of the robot. The group originally removed the wheel and replaced it with a larger wheel increasing the speed, a good idea; however, their plan did not consider that they were not allowed to remove parts from the Boot.

Therefore the approach taken by the group was to use their project PICA

strategy and they were able to modify the wheel by creating an extension to use the original wheel as a shaft for a larger wheel.

This shows good initiative from the group, however the issue should not and would limitation control. The group would have been better to choose a product design strategy, where they generated a concept, which they could feedback to the supervisor in a company meeting, who could then evaluate the groups' design, making sure it is suitable for the set requirements. This would make sure the design fits the requirements and if not, it could be improved until it did. The groups' strategy for their hardware sub-system had certain requirements, one of which included a LED display.

The display was a creative concept as many ideas in the group were; however there was a delay in delivery (due to the University) which the group had not planned for. This delay was unplanned for with no risk contingency plan in place. This therefore meant the group had to alter their Giant chart to their needs at that time. This was poorly planned, as a better Giant chart would have had extra time allocated for work that could not be completed at the specific time.