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The goal of the course (HK), as it is stated on the official program is to “train the students to become independent in formulating, analysing and solving problems. The course emphasises independent project work. The teaching focuses primarily on theories and methods to support this self-sufficiency“. One of the basic elements of the course is the training that students receive in “practical project work by independently [from the teachers] plan and carry out a study visit [abroad]“.

Around 24 students participate each year (22 this year). The students that are eligible for this course come mainly from the Faculty of Mechanical Engineering. A few of them (four this year) come from the Faculties of Material Engineering and Vehicle Engineering. All of them have completed their first three and a half years of undergraduate studies and are thus very near their final degree. This is a very sought-for course and the selection process is strict, letting only the students with highest marks go through.

Brief description of this years project

This year the project was commissioned by Alfa Laval Agri, a Swedish company of the Alfa Laval group. The petitioner was Sören Lundin, responsible for the ALA’s Asian Market, and Anders Fågelberg. ALA is today considering an expansion of their Chinese representation to better reach the immense (hopefully) market that will be created once the Chinese start to drink milk as part of their normal diet. The project was to deal with the location of the factory where ALA’s products are to be manufactured.

Project HK: Learning by doing

Every year about 24 students take part in the course Industriell Ekonomi, Högre Kurs, better known in the department as HK. The last and most important part of the course is a consulting project that the students are almost completely responsible for, this year it was informally called “the China project“. This name was a label to group two quite independent sets of activities: Raising money and writing the report. It was the writing of the report and the activities associated with it that are normally meant when talking about “the project“. For many of the students in HK this was their first real project ever.

In a way, one could say that this paper revolves around this concept of the project being a “real“ one. What kind of behaviour does this “real“ project induce in the students, what can we learn about their idea of a project by observing them carrying this one out.

Even though this paper is, in a way, interested in the attributes that make the students feel this is a real project, there are nevertheless a few rather evident traits that characterise this project as a “real“ one: It is unique and directly related to the market, not a didactic experience prepared by teachers and repeated every year; it is commissioned by a real actor in the



international market (a Swedish multinational); it has the form of a consulting activity and its result is a report on some subject to be delivered at a certain date.

The fact that the project is not prepared by teachers and that they actually stand aside and let the students take command produces a very interesting situation: The students have to deal with the complexity of reality and base their decisions on what they have learned, both at school and in their private lives.

The students are responsible for the whole planning and organisation of the project. The head of the course acts as a bridge between them and the commissioner and defines a few basic milestones: Start and end dates and two intermediate deadlines. Apart from that his duties are limited to evaluating the quality of the report and setting the marks.

Teachers help the students to understand the meaning of the information they recover as well as to present it in a structured way. But it is up to the students to decide who will look for info (and what kind of info and for how long); who will dedicate his/her time to manage the group; who will organise the moneyraising activities; who is in charge of the economical matters; in a few words, it is their responsibility to see that the project is carried out.

Memes

This paper is based on the idea that what is normally called a concept is more an open collection of mind-traces than a complete set. Those traces are not exclusively used for one concept but that also form part of other collections. The set of traces that conforms a concept evolves through time, taking on new traces and leaving aside old ones. Gustafsson (96) uses the word “meme” to describe a set of traces that is passed on between individuals and that is the building block of societies. He is, I think, more interested in the different categories of transmission models that exist and their influence in the memes but in this paper I only intend to study the traces associated with the meme “project”.

The traces that compose the meme “project” are not homogeneous, their nature is varied and might be said to include ideas, feelings and other human movements. They can be sought after in the students’ discourse and in their actions. In both cases we are looking for symbols left behind in the records created in the process of either talking about the project or carrying it out. These symbols are what the students use/have used to be able to orientate themselves in a, for them, new and ambiguous situation created when trying to reach the goal: Writing a report on Alfa Laval Agri’s expansion in China.

Project

The symbol that appears at the genesis of the process is “project”. The set of activities to come related to the writing of the project are grouped under the label of “project”. From the moment when the activities were named “project” and on, everything will be understood as a project. This word carries with it a long tail of associations that structures and gives meaning



to the activities. What those associations are is the subject of this paper, and we will search for them in the structures and signs created (consciously or not) to support the project.

The importance of the labelling of the activities as “project” should not be underestimated. The money-raising part of the course was actually never labelled “project” (I have never heard it be called that) and thus never had the same structure as the report writing project. This will become clearer as we discuss leadership later on.

The genesis of the project is not situated in January 99 with the description of the goal and the circumstances around it (who is ALA, why are they interested in this matter), it is to be found long before. A more accurate starting point could be the moment when the students decide they are going to take part in the Indek HK course. They know when they make that decision that the most important part of the course is a project to be carried out under real circumstances. The sign (real) “project” starts then to structure the reality around the course (yet a sign). This interpretation is inspired in Vygotsky’s mediated knowledge. They do not know what they will do, but they know it is a project. The fact of naming the activities to come as “project” is intrinsically connected with the activities themselves. Other concepts could have been used to label the set of activities, such as excursion, adventure, exam, study, seminar. The concept “project” stands, as Saussure might have put it, in opposition these others. It exists adjacent but different to those and it is through the play of differences and similarities that students understand the meaning of “project” and of their own activities.

Traces

The meme “project” evidently exists already in their mind before HK starts. And a few directives concerning it are fixed by the teacher so as to be able to set a common framework: Beginning and end and well defined objectives. It is interesting to notice that these are also elements in the memes “excursion”, “adventure”, “exam”, “study”. What other elements could be found at such an early stage that differentiate “project” from the others?

Some of the students, when asked to talk about the China project, mentioned the other minor projects that they had to undertake in earlier stages of the course. These projects were studies that resulted in reports based on the information recovered through interviews and other information-retrieving activities. The studies were commissioned by Swedish enterprises and, even if they did not pay for them, they generally had an outspoken interest in the subject. Students recall them as good sparring exercises, way to learn a few basics to then be able to tackle the real project, the China project. They were good for learning about each other, about the info-seeking procedures, about writing techniques, all of which was useful when dealing with the China project. But they did not feel as real projects, not only retrospectively but already when conducting them.

Some characteristics that made the China project the real one as opposed to the smaller ones seemed to be its size and implications. Implications in the form of the interest of ALA in the report and in the form of the complications involved in managing 22 fellow students to get them to work as a co-ordinated group. It is interesting that they would consider the bigger



project as the real one as opposed to the other smaller ones. The smaller ones were experienced as a few weeks exercises whereas the China project was a real four months undertaking. It was an activity that was paid for by the commissioner and that required the students' full attention for a long period of time (more than most of the courses at the KTH). The meme "project" seems to contain as essential elements the traces serious and captivating.

Seriousness

The idea of the project as an activity that is serious has definitely motivated the students and has made them feel they were dealing with a real project. The concepts serious and real go hand in hand. But to say that it was real because it was serious and serious because it was real is unsatisfying. The seriousness of the project can be tracked in the students discourse and attitude towards the whole activity. They are ready to schedule meetings at 8:00 AM "to get something done", stay until late writing on their reports, wake up early to be able to phone China. Seriousness is mirrored in the students heavy feeling of responsibility; they are now playing a part in the real world and their role is "the professionals". Images of TV series with similar titles come to my mind: A group of four or five extremely skilful specialists that live rather unorthodox lives are brought together by some really cool guy who works for the CIA or something. This doomed squad completely changes character in the face of the excessive problem they have to solve: they become serious and responsible and so damn professional about this move they have to carry out, like saving the world or something.

The students have not yet reached the level of dexterity that would allow them to be a part of a Hollywood movie but the seriousness of the project, and the attitude that it induces, feels in a way similar to the one observed in those expert-teams facing the mission impossible.

They know, or more important, they feel they are not acting in the theatre of university where problems are engineered by the teachers, make-believe exercises that only have the form of projects (beginning and end, objectives, final deadline) but lack the substance of reality. This seriousness gives the project a special character and induces the students to adopt a professional attitude. This attitude reinforces the feeling of being part of a real activity and supports the making of decisions which entail a lot of extra work (something that, me having been one not so far ago, students all over the world are allergic against).

This importance given to the seriousness is one of the fundamentals of the pinkmachine research and is directly connected to the feeling many students expressed about the fact that they had not learned anything in school that had been of help in solving the management of the China project. They had not learned anything in school about managing projects because the projects they had undertaken were a) too small and, even more important, b) not serious (real). The fact that they were not serious influenced their state of mind when considering them as projects and made them not as captivating. Which brings us to the next matter.



Captivating

Something not important, or not as important, like the earlier reports they had to produce are projects in their form but not actual “real” projects. As such, they do not captivate the students a fact that prevents them from getting carried away. This is directly related to Gustafsson’s idea of projects as adventures, as activities that carry one away from the routine and make life exciting (the expression “projects are activities separated from routine” was indeed pronounced literally). This idea of adventure is part of the fundamental traces that form the meme “project” present in the minds of the students.

So far we have introduced the traces of “seriousness” and “captivating” as two fundamental elements of the meme “project” present in the students mind. It is in place to recall the reader that the traces “seriousness” and “captivating” are not present in the same way in all the students minds, we are here only drawing a general sketch. But what other traces have come up in relation to the meme “project”?

Plans and complexity, the dark attraction of catastrophe

Even if “project” has different nuances for each student, they all seem to share a few fundamental principles, such as the idea that practically every activity can be considered as a project: Life is a project, catching the bus is a project, taking an exam is a project. All these activities share the characteristic of having a start and an end (as most human activities) and an objective, and this is what, according to the students, entitles one to consider them projects.

Nevertheless, when pushed a little bit the students agree that this is a rather ineffective definition. It is true that all those activities can be considered projects but students smile, sort of wave their hands indicating the obviousness and admit to that they are not authentic projects. An authentic project should involve a series of intricately interrelated activities and preferably more than one person, even though that can be discussed. A plan is thus needed for the project to be carried out and becomes in this way an intrinsic part of a project: If it does not need a plan to be carried out it kind of doesn’t measure up as project.

Whether or not this plan is followed is not essential, it is the significance of needing a plan that counts. I wish once again to make reference to those TV series in which each episode is the story of a mission. If we strip their plot from the erotic/romantic adventures and of the nationalistic outbursts we might obtain something like: Some evil force commits a morally censurable action; specialists are gathered to form a team whose objective is to undo the evil; a very admirable and intelligent guy (most of the times) that has been a marine or a green beret in his good old days (maybe even took part in the Vietnam war) explains the complexity of the situation and makes up a remarkably cunning and delicate plan that fits the circumstances and makes use of the expertise gathered in the group; the experts get more and more into each one’s roll; the plan is followed but something goes wrong; an heroic action of one or several of the experts saves the situation and allows for the plan to be satisfactorily and happily carried out.



The plan is the central knot around which the plot revolves. And the thrill of the whole thing emanates from the uncertainty of the outcome. Will they be capable of carrying the plan out? Does the plan account for all the possibilities?

The complexity of the China project acted as a catalytic element and encouraged the students to get involved in it. Plans were made and lively discussed, milestones set up, and as the structure emerged, its weak points were distinguished: What happens if that group cannot carry out its part? Where do we find the information we need to write the report?

The project existed now not only as a vague consideration of something that had begun, had to be finished by a certain date and that had an objective. Now there was something concrete to discuss about: The plan, its validity in face of the complex task ahead and the specific elements of it that could go wrong.

The plan included the structuring of the students into groups, which had individual objectives; and the time schedule, with the milestones and deadlines. But events did not occur in that simple straightforward manner. Even after the project had been structured by means of the first plan, the team spirit and the involvement were not soaring high.

Up to now, what had happened was that the students had received the specifications for a study, they had met the commissioner, they had chosen three students to form a managing group (PLG) which had presented a first plan. This plan clarified the individual assignments so the students now knew their preliminary objectives. Still, something was missing.

| The emergence of organisation, the real project

It is not difficult to find reasons to believe that the China project was not as serious and captivating at all its stages. The students agree that the project started already almost one year before the specifications were delivered (Jan 99), shortly after they were admitted to the course. At this time they attended meetings with the students of that year's HK, mostly to listen to their advice about how to raise money for the trip. These consultations could be summed up with the maxim "start as soon as possible, preferably now, or rather, preferably yesterday". This urging feeling seems, by the students own account, to have made its way into the students' minds, but nothing really happened.

It is a well known fact that students (apart from a few odd cases) will not start doing anything until it is too late, but even if this might be a reason as to why nothing happened at those first stages it does not explain why the students did not feel it was already too late (which was the message the older students sent).

At that time the project (and the whole HK course) was buried under a pile of other activities: Other courses, exams, summer jobs and the like. But even more important was the fact that the group was not yet formed, the students were not really aware of who was going to participate in HK and they formed what can be described as an atomic non-co-ordinate gathering of individuals.



A few half-hearted attempts were made to improve the money-collecting process: Meetings were scheduled at which good intentions flourished. Students had brainstorming sessions to find out new creative ways of raising money and they organised themselves in small groups, each one responsible for one of the activities. This situation went on until the real feeling that the too-late stage was getting uncomfortably closer started creeping into the students. And then things started to happen. The good-will everyone-does-her-best attitude was transformed (though not dismantled) into an organised structure with defined functions. Everyone now knew what they had to do and, most important, accepted their roles in the face of the possibility of catastrophe (not raising any money and not travelling anywhere). This sudden crystallisation was blessed with success, giving the students the feeling that they were part of something exciting and aiding to lift the status of the project to a real project.

Until that moment, there had been no money-raising project: There existed no plan and no organisation. Even if there existed clear objectives (raise money) and clear deadlines the lack of a structured group with clear functions and of a descriptive plan prevented the students from taking concrete steps. Most of the undertakings had melted into the grey sea of vagueness.

But now it was different, all the elements needed to obtain a project must at this stage have been present because there is no mistake: They all agree that by this time they were up to their ears in a real project. They were dealing with a complex set of activities to be organised; the possibility of economical catastrophe had felt really near; the possibility of academic catastrophe could be sensed (still a lot of information to be retrieved and time was running out) and its reasons pinpointed; real money was starting to flow into the bank account; real people (not teachers) were interested in their work and had high thoughts about what to expect from the report.

Leadership

The students perception of leadership is also very interesting. A comparison of the leadership aspects of the two different set of activities (money raising and report writing) reveals some curious facts. But first things first: It was the exact same students that carried out both sets of activities, the 24 that formed the class, but there was a difference. The teachers never got involved in the money raising activities, this aspect was entirely left to the students to organise and solve. On the other hand, the teacher mentioned in a lecture that it would be positive for the quality of the report if the students chose a small group to be the project leaders.

Two things: With this allusion to the convenience of a clearly marked leadership, the teacher not only legitimated the decisions that the leaders would come up with but also stressed the nature of the undertaking: This was a project, and as such, it needed a project management group (projektledningsgrupp, PLG).

It is interesting that the students never questioned the existence of a PLG, neither during the project nor in the retrospective interviews. They might question their decisions, their plans



and even the aptitudes of the individuals that had been chosen, but not the existence of leaders. This acceptance of leadership is interesting for, at least, two reasons: One, it appears obvious that they accepted it; two, they did not build the same structure for the second set of activities: Money-raising.

Throughout the whole money-raising process (that lasted, with varying results, for about one year), there never existed a leader. Sure, they had a chairman (ordförande) but he never directed the class as the PLG did. The decisions were made almost always in a democratic way in meetings which the whole class attended. Even when things got a bit tougher (not enough money was coming in) it was the whole class that took the step towards a more structured organisation, in which a more defined leadership did not appear.

Why did they never feel that leadership was necessary to carry out the moneyraising activities successfully? Or else, why did they accept as obvious the existence of a PLG in the other part of the course? The fact that the teacher called one of the parts a “real project“ but did not ever intervene in the other one is the first and most significant difference between both of them. But there are other differences: The report-writing part had a very clear time frame which separated the activities from the rest of the world (very much like a picture frame does). This time frame was formed primarily by the start date, milestones and final deadline. A second difference is the involvement of external actors in the report: There were teachers, symbols of power and knowledge with the almighty power of mark-setting; and a commissioner, the representative of the real world. If the journey to China cannot be carried out, it is something that will only affect the private life of the students whereas the failure to produce a good report has effects outside their own world.

It is also interesting that they all agreed that a project needs a clearly defined project manager (that might very well, and indeed was, be a group of persons). But when I say “they agree“ I am profiting from the authority of the Spanish saying “el que calla otorga“ which translated into English yields “he who is silent accepts“ (there is probably a much nicer way of saying this). As has been said above, no one of the students interviewed questioned the existence of the PLG. But no one of the students mentioned either the necessity of PLG. As much as they talked about the importance of the objectives, of the difficulty of organising, of the decisive significance of the trip and the success in raising money, they never mentioned the need/importance of a managing group, it was so very obvious. This fact does not only shed light upon what students have learned about projects but also about the character of the meme project in our society. But this is a very wide question that I do not intend to follow up here.

Time

More essential concepts being blurred by their obviousness. When telling the interviewer about their experience of the project some of the students rarely mentioned time concentrating instead on the organisational aspects of the project. They would recall how difficult it was to take everyone’s opinions into account, or the problems that arouse from the interaction between members of the group, or the importance of the trip to China, leaving aside the



time press (which has been rather intense) or the almighty force of dead-lines. This is not to mean that they are not aware of these aspects since any comment about them would trigger a wave of noddings and understanding smiles. But it is quite counter-intuitive (maybe just unusual) to listen to a student talk for 20 minutes non-stop about the project and not hear the word “deadline“ or “time schedule“.

The first-order explanation of this fact could be that students are very used to confronting deadlines that have substantial consequences: Every exam is a deadline. Thus, they do not experience deadlines as something new and exciting and worth talking about, they are part of the wall of obviousness (Gustafsson: självklarhetens mur). On the other hand, managing the wills and fortunes of 22 fellow students is something they have never been involved in. But this tells us more about the nature of human memory than about the concept of project students have.

Conclusion

This paper has shown which are the essential characteristics that students associate with projects, and how these associations and ideas manifest themselves in the course of a “true” project.

Pink Machine is the name of a research project currently carried out at the Department of Industrial Economics and Management at the Royal Institute of Technology, Stockholm. It aims to study the often forgotten non-serious driving forces of technical and economical development. We live indeed in the reality of the artificial, one in which technology has created, constructed and reshaped almost everything that surrounds us. If we look around us in the modern world, we see that it consists of things, of artefacts. Even the immaterial is formed and created by technology - driven by the imperative of the economic rationale.

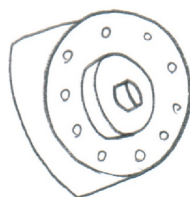
As Lev Vygotsky and Susanne Langer have pointed out, all things around us, all these technological wonders, have their first origin in someone's fantasies, dreams, hallucinations and visions. These things, which through their demand govern local and global economical processes, have little to do with what we usually regard as "basic human needs". It is rather so, it could be argued, that the economy at large is governed by human's unbounded thirst for jewellery, toys and entertainment. For some reason - the inherent urge of science for being taken seriously, maybe - these aspects have been recognised only in a very limited way within technological and economical research.

The seriousness of science is grey, Goethe said, whereas the colour of life glows green. We want to bring forward yet another colour, that of frivolity, and it is pink.

The Pink Machine Papers is our attempt to widen the perspective a bit, to give science a streak of pink. We would like to create a forum for half-finished scientific reports, of philosophical guesses and drafts. We want thus to conduct a dialogue which is based on current research and which gives us the opportunity to present our scientific ideas before we develop them into concluding and rigid - grey - reports and theses.

Finally: the name "Pink Machine" comes from an interview carried out in connection with heavy industrial constructions, where the buyer of a diesel power plant worth several hundred million dollars confessed that he would have preferred his machines to be pink.

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also available at

www.pinkmachine.com

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