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How Male Machismo Shaped Project Management

By Bas De Baar

Imagine a man dressed in black sitting next to you in the office. He looks over your shoulder, observing as you type up a report. He takes notes, nods and mumbles quietly to himself. He counts the number of keystrokes you perform per minute. You try to ignore him, but have little luck. The next day you get instructions from your boss to remove fifteen keys from your keyboard as “they are very infrequently used,” to count in advance the exact number of words the report will have when finished, and to delegate the writing of a third of the total word count to each of three colleagues. This will surely seem an annoyance.

You probably have a hard time believing that this scenario could actually happen in reality. What is remarkable is that this scene basically characterizes how we manage projects. At least, it characterizes project management in its most popular form: plan-driven. There is no denying that the most popular way of doing projects is described in PMI's Project Management Body of Knowledge (PMBOK). In Europe, PRINCE2 is widely used. Both are examples of plan-driven approaches. One has to ask, though, why plan-driven methods are currently the most widely-accepted. Why do we manage projects the way we do?

The argument that they are simply “the best” doesn't hold. If they were, no one would have created agile methods, for example. This illustrates that plan-driven methods may have some fundamental flaws in their underlying assumptions. Are they easily accessible, and can one quickly learn to use them effectively? On the contrary, the PMBOK is notorious for its tremendous size, dry content and high costs: not the aspects you associate with “easily accessible.” What is it, then, that caused the PMBOK (as the flagship of plan-driven approaches) to be considered the standard in our profession?

Scientific Management

To answer this question we have to go back to the man in black mentioned in the introduction. By now, he would be well over one hundred years old. A century ago, Frederick Taylor became famous with his *Principles of Scientific Management*¹. He actually walked into factories with a stopwatch, actually measured how fast people were assembling widgets and how many hand movements it took to assemble each one. Though today's average worker might find this behaviour intrusive and disruptive,

¹ http://en.wikipedia.org/wiki/Scientific_management

it made sense within the mindset of the Industrial Revolution. A company was regarded as a machine, a newly invented tool that made a previously inconceivable degree of progress possible. Within a machine, one would find many cheap nuts and bolts that could be easily replaced. Every element in the machine has a single, simple function. The ultimate goal was to create an organization that wasn't dependent on a single individual; every single worker could be replaced in this efficient machine. These were the happy times that shaped the projects of today.

Taylor took processes and broke them down into smaller steps. The smallest steps would be optimized for efficient performance, which also meant that people were doing the same step all of the time. This led to the separation of planning and execution, where other people would determine in detail what workers should do: the dawn of *middle management*. If your goal is achievable by, and defined in terms of, efficient and repeatable steps, there is no room for a trial-and-error approach. Steps were analyzed upfront, planned and perfectly executed. The result had to be good. If the output was not good, the plan was not executed correctly.

Another first: *plan defining reality*.

Of course, the century that followed the establishment of Scientific Management brought with it some useful features, which we will visit later. First, we will consider how the fundamentals of plan-driven management can be found in the ideas of Taylor. Lauri Koskela and Greg Howell² describe what these fundamentals, the underlying theories, are for plan-driven PM methods. There is no single theory that explains project management. It is instead a collection of several fundamental ideas: the *theory of project*, and *theories of management*.

The *theory of project* views tasks and operations as a transformation process. *Inputs* are the starting point, an operation occurs, and *outputs* are the result. For example, requirements specifications are given as input, the operation "programming" starts, and the end result is a running computer program.

Do What the Plan Says

Like Russian Babushka dolls (a set of wooden dolls of decreasing size placed inside one another) each transformation can consist of multiple, smaller transformations. Requirements specifications A, B and C are inputs; programming tasks D, E and F occur; and the output consists of programs X, Y and Z. The management principles behind this all rely on the fact that the inputs, outputs and decomposition of the tasks

² <http://www.cpgec.ufgrs.br/norie/iglc10/papers/47-Koskela&Howell.pdf>

are configurable to the operator's liking. To describe "management," three theories are needed: management-as-planning, the dispatching model and the thermostat model.

The idea behind *management-as-planning* is that management soaks up all the information about the process, creates a detailed sequence of actions, with time and resources allocated, throws the plan over the wall to the operational level and yells "Just do what the plan says." This last part is the *dispatching model*, where one issues orders down the chain of command that someone has to start on a task, with finality: the worker will automatically—without any hesitation or problem—start working on it.

From the management-as-planning view of the world, there appears to be a direct relationship between what is on paper (the planning) and what happens in reality (the execution). In creating a plan that will be executed blindly, there is a requirement to be very sure that the planner knows exactly what must be done. They must, in effect, be able to predict the future. And that is exactly the appeal of this approach to management: it provides a sense of predictability (that no surprises will occur) and a sense of ultimate control over the situation (change the planning, and all the working people will change what they are doing). Paper is reality.

If the paper plan is right, then any deviation from the plan during execution is prohibited. Consider now the *thermostat model*. In this model, *control* is nothing more than watching for deviations from the plan and manipulating the real world back into shape so it once again fits the plan. The desired situation is defined at the outset, and the "temperature" of the project is taken at intervals and the process corrected until the desired situation is obtained. From a management point of view, this is a good thing: the process is smooth and predictable, and the management has ultimate control.

Looking For Alternatives

We now consider Scientific Management further. What are the alternatives? A century ago, there weren't many. Before Taylor, companies were run based upon inherited social station and how much abuse one would tolerate. Thus, the machine metaphor was a huge improvement. A lot has happened in the last hundred years, however. Views and models have evolved that put human needs at the forefront, that don't take for granted that people are individuals, that approach humans as social beings. There are other ways to look at organizations and their processes, but the influences of Taylor are still dominant in today's Project Management methods. "No," a PMP would object, "the PMBOK *also* discusses motivating people." This is granted, but adding a concession on the side doesn't admit it as a fundamental, underlying, core concept. Putting a bumper sticker that says, "Save the Planet" on your gasoline-guzzling, carbon dioxide-belching SUV doesn't make the car environmentally friendly.

It is not that Scientific Management hasn't worked. It has, of course. Otherwise it would never have come into existence in the first place. The largest shift that helped mold today's plan-driven PM approach came during World War II. Although the Project Management icon H. L. Gantt invented his chart technique in the First World War of the last century (during the building of Navy ships)³, the largest addition came from Operations Research (OR)⁴. OR provided methods and techniques that used statistics and mathematical modeling to help make decisions in the face of complex problems (the actual problem for which it was pioneered was the question of how many ships should be in a convoy to optimally respond to a U-boat attack). The introduction of mathematical tools generated many additional techniques like Critical Path. All of these major tools were developed either by the Army or in large technical or scientific environments. There is no denying: Project Management was shaped in male-dominated, technological or strongly hierarchical organizations.

The most important reason Project Management is modelled as a machine is this last fact: the social groups of males, mathematicians, technologists, scientists and soldiers are not famous for their sensitivity to social aspects, to use a vast understatement. The illusion of *objectivity* created by Scientific Management is a good argument to help steer away from "touchy-feely" elements. The metaphor of a machine is so strong, so intuitive and natural for these social groups, and it leaves absolutely no room for the quirkiness of humans. If Project Management had instead evolved from the practice of women sewing quilts, one can imagine that it would be drastically different.

The environment where Project Management emerged brought forth the machine model. But how has it lasted? Plenty of women use plan-driven methods. There are even sociologists that are convinced that proper Project Management is done the plan-driven way. This, then, is exactly the reason why it has had such a long run: it is a self-reinforcing process. The organizations and institutions that shaped PM had, in those days, easy access to publishers and eminent authority. They had the means to spread the word, and the credentials to be heard and believed.

To belong to the group of Project Managers, one must follow the code, where "the code" is the PMBOK, PRINCE2, etc. The larger the group that adheres to and communicates according to the code, the stronger the code gets. In the end, the group's code becomes the most important element that holds the group together; it makes members of the PM profession better than other mortals. Taking this view to an extreme, the letters PMP behind a person's name are a badge of honour, the secret

³ http://en.wikipedia.org/wiki/Project_management

⁴ http://en.wikipedia.org/wiki/Operations_research

handshake of the Project Management society. In short, the plan-driven approach gained critical mass and pressed all other approaches out to the sidelines.

Fuzziness of Social Human Beings

The machine metaphor has its obvious merits. For instance, it supports thorough understanding of the problem as well as the solutions under consideration. A recipe-style approach, such as a plan-driven one, looks repeatable, predictive and controllable. The question remains, though, whether it is sensible to use a process that is understood but wrong, or if one should instead use an approach that is correct but cannot be understood. Either way, plan-driven methods are dominant as a Project Management approach, and it is irrelevant whether they are right or wrong. They have been given a privileged position by history and social aspects through natural selection. It is ironic that this meticulous approach should be so favoured by what it seeks to eliminate: the unpredictability and fuzziness of social human beings.



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