

Engineers and management: a double challenge

Engineers, who are more often known for their know-how and technical skills, are more and more called upon to hold management positions which require project and team management skills. Consequently, it bears looking into what qualities engineers must possess and what challenges they must face as engineers and managers.

The Guidelines to Professional Practice, prepared by the *Ordre des ingénieurs du Québec* (hereafter the "Ordre"), indicate that, nowadays, it is essential for engineers to participate in project planning and have a comprehensive view of every step of the projects to which they contribute, as well as see to the technical aspects. Thus, the challenge is twofold for engineers who must excel at carrying out the technical aspects of their projects, and guide and inspire their team.

Engineer Thierry Pagé, founder and CEO of Odotech, an environmental firm specialized in measuring and monitoring odours, has extensive experience as both an engineer and a manager. In 1998, Thierry Pagé, then in his mid-twenties and a recent graduate of *École Polytechnique* in chemical engineering, decided to start his own company in order to apply and market his expertise in a field which was untapped at the time. He was recently honoured at the *Association des diplômés de Polytechnique's* 34th Gala and received an award for technological innovation. According to Mr. Pagé, "creating this innovative technology was a team effort, which is why the management aspect is inevitable".

CONTINUED TRAINING

When he started his business, Thierry Pagé did not yet have any specific knowledge relating to project or team management. He only subsequently decided to develop his skills and take various training courses. "Without even realizing it, our academic engineering training taught us how to manage several files at once" says Pagé. At the time, the curriculum at Polytechnique offered only one management course; he found the numerous team projects to be more educational. "We had from seven (7) to nine (9) assignments to hand in each week and we always did them in a team, which, in itself, was extremely beneficial from a training perspective", points out Thierry Pagé. Given the circumstances,



one constantly had to rethink, develop and adapt.

Getting involved in extracurricular activities also contributes to developing one's management reflexes. "Why? Because we assign roles, we willingly take them on and we do so with passion. This is management at its purest because there is no financial compensation attached to it"; being able to lead a team to completing a project without monetary appeal is "the best example of management" according to Thierry Pagé.

A QUESTION OF CREDIBILITY

Credibility is an important quality for an engineer and manager. How can we gain credibility? On the one hand, it is acquired through competence. On the other hand, it is developed with active listening and availability to team members as well as the way we interact with them so as to ensure that they become better professionals.

Credibility is paramount in becoming a leader. Thierry Pagé believes that leadership is acquired by setting an example, through natural recognition, irrespective of the hierarchical structure. Consequently, what makes a manager a good leader is being recognized as such and being able to gain the team's confidence. Nowadays, leadership is no longer a question of authority, but rather a matter of recognition, combined with a true resolve to encourage the team to do better work.

"Exercising leadership means making someone do something they would not have thought of doing themselves... My type of leadership is to help people evolve and develop so that they give the best of themselves."

Richard Chénier, director of Development and Training Services at *École de technologie supérieure*, shares this view



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of leadership. “Even though authority is essential in management, it’s the leadership that makes the difference. Leadership is an informal and unstable status people give us, not the other way around. There is an emotional aspect to it, an element that is very much relationship based.”

Jean-Charles Marin, professor at *Université du Québec en Abitibi-Témiscamingue*, offers a 1-day training workshop for members of the Ordre entitled “Team management: leadership”. The main objective of this course is to help managers better understand the leader’s role at every stage of team development. It is composed of a theoretical part and practical exercises to help managers develop their leadership skills.

First, engineers learn to recognize the stages of group development and draw upon tools to improve the team’s efficiency. Then, Jean-Charles Marin teaches participants how to define themselves as leaders and develop what he calls “the team’s super vision.”

“A TEAM SHOULD NOT BE PUSHED, IT SHOULD BE PULLED”

For Thierry Pagé, “a team should not be pushed, it should be pulled”. He provides an example to illustrate his point: “We once had a young and very talented professional who wanted to take on more responsibilities. He wanted a

The coach

According to Richard Chénier, director of Development and Training Services at *École de technologie supérieure* (ÉTS), for engineers, technique is not necessarily at the forefront; a good manager must have the required interpersonal competencies and know how to communicate well. In order to carry out management duties, one must demonstrate solid leadership so as to define clear and precise objectives to guide, motivate and consolidate their team.

“The manager is like the coach of a sports team. He or she must ensure that goals and expectations are clear, as well as implement the means and conditions that will allow the group to reach the desired results and be successful.” Consequently, it is absolutely indispensable for engineers to equip themselves with the necessary tools. “An individual who is put into a management position must absolutely follow training courses to understand this particular role and develop a vision”, claims Richard Chénier.

ÉTS’s Development and Training Services offer a multitude of training activities to meet the professional development needs of professionals and companies. One of these training activities, entitled “Professionals with management duties”, given by Jean-Pierre Benoît, training officer at ÉTS, is intended for engineers who wish to improve their management abilities. This course allows professionals to develop their management skills, while maintaining their effectiveness as experts in their field of practice.

management position. I could see that he was ambitious, but I told him that appointing him manager before he had the credibility to shoulder that position would be the worst thing I could ever do for him. I explained that leadership is acquired by example and that I would give him a manager’s position when people saw him as a leader on their own. He worked toward that end and he met the challenge. Finally, after a year, he had taken on tremendous responsibilities. I believe that worked to his advantage and he realized it as well. Being a manager does not only depend on an administrative decision; one must have won the confidence of those around them to be able to fill this position. Nowadays, hierarchy is not enough.”

STRIKING A BALANCE BETWEEN THOROUGHNESS AND FLEXIBILITY

A good manager must be thorough and flexible. The planning phase of a project is a crucial step in its successful completion. Establishing an action plan is paramount to determining the processes and control points as well as taking corrective measures, if necessary. When establishing an initial course of action, we can make sure that the plan we put in place is followed properly and the objectives

are reached. It is a tool for the manager, as well as a guarantee that the client's primary objectives will be secured and respected.

"However, it would be too difficult to be a manager and remain completely rigid. We know what the objective is and we have a strategy, but we can never follow the plan entirely and to the letter", says Thierry Pagé. The manager must be flexible in order to adapt to unforeseen situations and problems that can arise throughout the project. If the plan is not respected, we must understand why that is the case, make the appropriate adjustments, verify their effectiveness and implement a mitigation plan which should always be in line with the objectives determined by the client.

COACHING, ADAPTABILITY AND COMMUNICATION

"A manager must be a coach to its team", points out Thierry Pagé. "I believe one has to be an inspiration and a motivator as well as follow up, listen to people's needs and set goals for people so that they may reach professional objectives and exceed their limitations". This is why being a good communicator is crucial for engineers in order to be better acquainted with their team members and understand their strengths and weaknesses. This point is very important when it comes to putting teams together for future projects. Communication represents a huge challenge given how essential it is to adapt to different personalities, situations and issues relating to various projects.

For Richard Chénier, the engineer's work means first and foremost a duty to constantly adapt within a team and implies a continuous learning experience. "The ability to adapt is a leader's best quality", says Chénier. In fact, for each project, the challenges are different, generations change and projects turn out to be more and more multidisciplinary. "The management aspect as well as the reflexes and skills we need to develop are constantly evolving", adds Thierry Pagé.

In his day-to-day as CEO of an SME, Thierry Pagé learned a lot about management. In fact, engineers who work in SMEs have a much larger range of responsibilities than they would in large firms. In order to manage his company, Thierry Pagé prefers to delegate, verify and follow up rather than control. "We control situations, not people", he says. And as far as he is concerned, being open to international matters has allowed him to meet specific challenges, such as managing people from different cultures and taking into account diverse legal aspects.

In this context, learning to delegate is all the more important. Thierry Pagé advises engineers and futures engineers not to hesitate to gather material, take training courses and seek the advice of seasoned engineers. Most of all, he emphasizes on one major point: they must learn to have confidence in themselves.

The strategic communicator

Sylvie Thiffault, training officer at CFC Dolmen, designs and conducts training courses relating to management skills. She offers a course for engineers, entitled "The manager: strategic communicator". According to her, a good engineer/manager must, at the outset, appreciate the difficulty in managing a team. The capacity for insight is very important because it allows for "reflection and reassessment which foster growth", points out Sylvie Thiffault. Another important quality in team management is "being able to understand others before trying to make others understand you". In fact, this is how managers can learn to adjust to situations and personalities. "It is necessary to understand before we act". Finally, good management implies being able to delegate and have confidence in one's team members. This way, individuals feel that their expertise is recognized and respected, and the manager gains credibility.

The training course "The manager: strategic communicator" looks at management from two (2) angles. The first is the communication aspect. As is the case when driving a car, there is a blind spot in communication. To communicate well, managers must reduce their own blind spot, meaning that they must "go get what they cannot see themselves at first glance". The second angle is the "strategic" aspect. This step allows managers to learn how to sense when the winds are changing, as well as develop their political skills and ability to exercise influence. The training officer compares the manager's situation with respect to his or her team to a chess board. "On a chess board, as in a company, each individual occupies a square, which represents a given position within the company. Each person has his or her square and exercises his or her influence; however, it is the position of each person on each square of the chess board that will determine their influence."