

1. Introduction

Creativity is the most precious asset engineers and scientists bring to the Hi-Tech environment. The nurturing of this asset has made the difference in the long-term competitiveness of nations and enterprises.

By its very nature, Hi-Tech enterprise requires creative people with a strong technical background to manage not only research and development, but also other functions such as administration, manufacturing, marketing, and sales.

Beyond Hi-Tech, the need for highly qualified and creative technical people in management extends to organizations concerned with environmental issues, to government, and to industries dependent on information technology, such as finance, insurance, and the like; in short, wherever technology plays an important part.

The global implications of Science and Hi-Tech have added another dimension to the demands made upon those who have or will take on management responsibility.

Traditionally, the organization chart has defined the management hierarchy as well as the decision-making process. But in organizations where information and rapidly changing know-how play a significant role, up-to-date technical knowledge must be introduced into the decision-making process at all levels. As a consequence, the most capable and creative scientists and engineers are asked to assume management responsibility very early in their careers.

In the past, such responsibility was not thrust upon them until they had acquired some “experience.” Now, however, there simply are not enough “experienced” people available who have an adequate, state-of-the-art, technical background.

In this environment, the starting professional and the newly appointed manager face a unique problem: the opportunity of learning from experience is not sufficient to make up for the almost total lack of preparation for the nontechnical aspects of management during the course of a formal technical/scientific education.

This problem can be further aggravated by a negative attitude toward the very concept of management on the part of people who have acquired an advanced degree. Such an attitude is not uncommon in graduate science and engineering departments in many universities. Aversion to management responsibility on the part of university faculty is generally recognized. In scientific and engineering graduate

schools, there is often an additional element of elitism toward management-related academic pursuit and thus toward management itself.

The “academic atmosphere” of some graduate departments encourages a negative or even disparaging attitude toward management on the part of young scientists and engineers. Yet, management responsibility is thrust upon the most promising people emerging from that environment.

There are, of course, notable exceptions to this image of science and engineering faculty. Some universities encourage faculty consultation to industry and government, an activity bound to develop an appreciation for management issues. “At Stanford University there was a joke that faculty members could not get tenure until they started a company” (Levy 2011). Some schools encourage an additional MBA degree which goes a long way toward teaching the nontechnical skills of management.

But a significant portion of the best-trained scientists and engineers, destined to become managers within 5 years after ending their formal education, are ill equipped to assume management responsibility. In spite of 16–20 or more years of education, scientists and engineers find themselves without an adequate frame of reference in dealing with the nontechnical aspects of management.

What is more, many of the most highly valued engineers and scientists have personal characteristics which are at odds with the need for positive interpersonal relationships at the work place. These characteristics may be the result of natural inclination or may be acquired or developed as a way of adapting to a unique environment. A negative attitude toward management on the part of creative professionals may be reinforced by an early experience with a newly appointed and inexperienced manager. Very likely, this manager has come from the ranks of scientists or engineers and was selected for creative ability, rather than interpersonal skills.

This book about the Management of Creative People is intended to question and hopefully influence some of the attitudes toward the subject of management, prevalent among engineers and scientists. It also endeavors to offer a new understanding to the experienced manager who must deal with creative people.

The book’s principle objective is to bring about an awareness of the most significant issues facing managers dealing with creative people, and to examine some of the ways managers have learned to deal with these issues. The material is based, to a large extent, upon personal experience. It draws also upon management training material, which I have found particularly relevant and effective in dealing with creative people in a variety of situations, be it in an R&D laboratory, a university, or a new Hi-Tech venture.

The book also points out some relevant literature that has brought the art of management toward a scientific discipline.

The discipline of management lacks some of the unity and rigor of the physical sciences. In that sense, it may be compared to medicine.

Nevertheless, in the case of management as with medicine, the results can provide dramatic evidence of the skills of the practitioners.

The experienced manager will be reassured by the forthright discussion of some of the most difficult, personal aspects of management which are all too often avoided.

Room has been left for divergent views about some of the more controversial aspects of the subject. On the other hand, I have not hesitated to take a position when it seemed appropriate.



<http://www.springer.com/978-3-642-24634-0>

Managing Creativity in Science and Hi-Tech

Kay, R.

2012, XX, 196 p., Hardcover

ISBN: 978-3-642-24634-0