Abstract  Internal communication within a company is essential for the implementation and proper functioning of any ISO-based quality system. Moreover, staff empowerment and distribution of responsibilities are key points in the ISO 9000:2000 quality guides. Although not specifically mentioned in the quality guides, external communication plays a fundamental role in assuring customer satisfaction and obtaining good ideas to improve company performance. This paper has two main parts. First, the importance of internal and external communication is reviewed and it is shown that managers should allocate more resources to both areas. It is also demonstrated that environmental management systems are directly derived from the quality guides. Second, the results of an enquiry to assess the efforts being made by a group of Italian senior managers to improve internal and external communication are evaluated.

Keywords Communication · Quality management · Environmental management · EMAS · ISO14001 · ISO 9000

Introduction

Quality issues continue to be at the forefront of industrial discussions and are a major concern of scientists working in and/or advising industries. This is reflected in the updated version of the ISO 9000:2000 standards [1, 2] which introduce new industrial perspectives from the pharmaceutical and automotive industries (the latter can be obtained in more detail in ISO/Technical (TC) 16949). In addition, many companies face the implementation of ISO 14001:1994 [3] to cope with the current environmental demands of society. Both standards should make senior management ask: Do the quality and environmental guidelines cover different issues or are they complementary? And are managers and workers prepared to face the issues raised by these new standards?

This paper presents an overview of ISO 9001:2000 and ISO 14001:1994 and suggests that the latter is not absolutely necessary as environmental topics have always been covered by “quality ideas” in ISO 9001:2000, providing, of course, that quality is well understood by everyone in a company. It is worth noting that a detailed study of the respective guidelines is outside the scope of this paper. Similarly, ISO 17025 (specific for laboratories) is not detailed as its first part is a typical quality system.

Communication is one issue, among others, that has to be addressed by anyone implementing an effective quality and/or environmental management system (EMS). Although this topic is essential when facing any important change or project in any organization (in any laboratory) it is seldom discussed at chemical forums. This paper reports on the results of a survey involving Italian managers implementing ISO 9000 and/or ISO 14000 systems.

Has quality been understood?

Our present ideas on structured and systematic quality originated from the international distribution of reputable
industrial products or services. They evolved from “excellence” or “intrinsic quality” (e.g., in the eighteenth century, textile goods and commerce were strongly associated with Yorkshire and Lancashire in the United Kingdom; Venice, Genoa and Milan in Italy, and the Catalonia Coast in Spain) to “compliance with specifications” (e.g. number of defective units before World War II). After the crisis in the 1970s, many companies looked at the Japanese approach to business and realized that a quality focus was a must for everyone in the company, therefore, the pioneering ideas of Deming, Juran, Gryna and Feigembaum [4, 5, 6, 7] were implemented on a wider stage.

Those who perceive quality as only a marketing tool to gain a marketplace or increase revenues, might consider “quality management” as a way to reach the minimum level of “quality” the customer would accept without rejecting the product (service). Or conversely, should “quality” indicate either excellence (in every aspect of the company) or a satisfactory relationship amongst customers and producers?. People who understand quality (as doing things right the first time round and well enough to satisfy the client, even going further than required) do not perceive quality systems as a mandatory requirement nor as an obligation imposed by the customer to pass an “exam” (audits, customer evaluation, etc.).

The final decision to start up a quality programme is made by senior management and the chief executive officer (CEO) (or stakeholders). Their decisions and actions will not only determine the strategies, activities and priorities but the passion with which they are to be performed. If management does not really “feel” quality, they will not be able to communicate enthusiasm for change nor a real quality philosophy. Their subordinate managers will perceive their claims as “more unnecessary work” and, so, the workers (in charge of doing all the work). Under these circumstances, it is difficult to induce motivation (empowerment) and willingness to undertake the proper path. There is a tendency to blame workers for this failure, but it has been shown that the workers are not the real cause of bad quality implementation [8, 9]. The key tasks that managers implementing quality assurance or automation projects should perform are: to get involved in staff’s duties, to encourage discussion and debate, to motivate and communicate, and to be open to everybody’s ideas and suggestions (i.e. to accept and promote bi-directional communication). Therefore, communication paths as those in Fig. 1 are to be promoted and/or reinforced [8, 9]. Recently, it has been reported [10] that the way in which companies treat their employees can improve profitability by up to 19%, which is a striking increase when compared to the values of 6% or 2% for research and development (R&D), and business strategies, respectively.

Nevertheless, it is difficult to discover and accept one’s own misunderstandings on quality and become convinced of changing one’s way of working. Therefore, published experiences are infrequent. A nice exception is the paper by Rafiepour [11] where he (the company’s CEO!) declared himself to be the main obstacle to the implementation of their ISO 9000-based management system. At first, he wanted to be informed about everything, to make all the relevant decisions and to distribute the general tasks. Although he was demanding changes in the organizational style he did not realize that he had to delegate authority and responsibility. After severe discussions with the external quality advisors he was told to change his attitudes and let his people get on with the work. Now, he delegates authority and concentrates on general supervision and generating ideas. This example shows how subtle quality problems can be. Several other ideas have been reported as being typical of quality misconceptions [12, 13, 14, 15, 16] and some of them can be used to support the discussions presented in this paper.

**Quality ideas**

A quality system is viewed as an end in itself, and many efforts and resources are allocated to develop the system (forms, sheets, computerization and automation, etc.), rather than on changing the working philosophy or the managers’ and workers’ minds. Accordingly, quality implementation focuses on the system and not on the people (the main actors and subjects of any change). A very similar problem has been reported for laboratory information systems (LIMS) or laboratory automation pro-