**On the Professional Authority of Quality Engineers and the Gaps in both their Epistemic and Organizational Authority**

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**ABSTRACT**

While the role of quality engineers can be defined, the authority of quality engineering as a profession is a contested issue. It relates both to the occupation’s internal regulation as a professional association with clearly defined expertise and quality engineers’ professional status within their organizations. In this work, we examine the professional authority of quality engineers in light of these two professional authority facets. We focus on the situation in Israel as a case study, though our insights are relevant to quality engineers around the globe. We demonstrate limitations with regards to both (1) the epistemic authority (expertise) of quality engineers vis-à-vis their **professional association** status, and (2) the **organizational authority** of quality engineers vis-à-vis their role as quality managers within the organization. These limitations are attributed to the engineers’ occupational status as a ‘semi-profession’. The level of expertise required of the occupation is not fixed and uniform. Engineers’ authority within the organizational structure is unclear, and they are allocated different levels of influence, usually at the discretion of their employers. As such, we find that quality engineers’ expertise as a professional group remains an open issue.

**KEYWORDS**: profession; authority; quality; quality engineer; expertise

# Introduction

The professional authority of quality engineering is a contested matter relating both to the occupation’s internal regulation as a professional association with clearly defined standards of expertise, as well as to the role and status of quality engineers within their organizations. More specifically, this work examines the professional status of quality engineers in Israel and argues that there are limitations both in (1) the epistemic authority (expertise) of quality engineers, in lieu of the **professional associations** status, and (2) the **organizational authority** of quality engineers, in lieu of the role of a quality manager status within the organization. Both issues are a manifestation of the profession’s as being a “semi-profession”. On the one hand, the expertise required of the occupation is not fixed and uniform. On the other hand, their authority within the organizational structure is unclear. Consequently, the main conclusion, is that the professional authority of the quality engineer is not uniformly established and recognized; rather, it is determined locally, according to specific organizational arrangements.

We examine the professional authority of the quality engineer, in light of noteworthy quality failures that have occurred in recent years that have affected both companies and consumers. Recent events involving quality-related flaws in production, manufacturing and construction in Israel and worldwide have highlighted the need for professionalism in quality engineering and the authority – or lack thereof – of professional authority for quality engineers in for example, in Israel, Remedia Inc., a pharmaceutical company, changed its baby formula without following proper quality engineering protocol, resulting in the deaths of two infants and severe injuries to another 23 infants ([State of Israel v. Balak et al., 2013](file:///C%3A%5C%5CUsers%5C%5Csharo%5C%5CDownloads%5C%5CThe%20profession%20%20professionalism%20of%20the%20quality%20engineering%2C%20new%20version.docx%22%20%5Cl%20%22Ronen2013)). Such events also stimulated discussions about the need to institutionalize the quality profession. Some quality engineers working in industry in Israel have even claimed that a professional and empowered quality engineer can reduce or prevent the occurrence of such events, and that establishing minimum qualifying standards for practitioners will cut the risk of similar unintended errors.

The role of the quality engineer in most organizations is a job requiring “soft skills” ([Blades, Fauth & Gibb, 2012](#Blades)). There is no uniqueness attributed to the required knowledge and, therefore, their authority stems solely from the norms and practices within the organization employing them and not from a regulator.

Though this article focuses on the situation in Israel, its insights are relevant to companies around the globe. We demonstrate that there are limitations both in the epistemic authority (expertise) and the organizational authority of the quality engineers within the organization which are a manifestation of the status of the profession as being a “semi-profession”.

The paper has two parts to it: Part 1 presents the theoretical constructs of this claim and Part 2 demonstrates it empirically. Part 1 is comprised of two chapters: In Chapter 1 we flesh-out the concept of a semi-profession, in contrast with the ideal of a profession. Chapter 2 delves into the notion of Professional Authority, as comprised of both the epistemic authority of the professional association and the organizational authority of the professional within the organization. Consequently, the data for the research is derived from questioners and interviews. The method used is a qualitative integrated method. The qualitative section is based on in-depth interviews with seven quality personnel from various leading disciplines. The results of the study provide insights into how quality practitioners perceive their professional role in firms’ hierarchical structure and in what way managers can leverage the tension between expertise and authority for the benefit of their organizations.

# Chapter 1: Semi Professions and Professions

## Professionalism - what is the ideal of a profession

Among sociologists there is a consensus that a professional group is an organization or association that holds unique theoretical knowledge that requires its members to complete complex studies and post-examination certification ([Abbott, 1988](#Abbott)). The literature differentiates between two types of professionals: those involved in a major (medicine and law) profession ([Glazer, 1974](#Glazer)) and those involved in semi-professional (teaching, pharmacy) occupations ([Benveniste, 1987](#Benveniste)).

In the literature, three criteria are usually used to defining an expert. The expert’s work (1) produces successful results; (2) consistently matches the work of her peers; and (3) can be reproduced and measured, when there is a difference between specializations ([Ericsson, 2007](#Ericsson)). For example, a cyber expert is measured by the degree of his success in protecting or penetrating technological systems; however, a medical expert is measured according to his knowledge and success in the chosen field of specialization.

The term semi-professional, which is generally—as this paper asserts—associated with quality engineering, has been defined as an occupation whose learning requires (relatively) short training, does not have a standardized, uniform body of knowledge, and is largely based on technical skill. Due to their reliance on a relatively weak body of knowledge, among other reasons, the authority of semi-professionals vis-à-vis customers and the company or firm in which they work is lower than professionals.

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The monopoly allows professionals to force their customers/employers to agree with their analysis of a situation and accept the proposed treatment/solution ([Lysaght & Altschuld, 2000](#Lysaght)(. It also enables the respective professional group to demand remuneration and prestige.

The literature also delineates the three actions all professionals perform when solving a problem: (a) Diagnosis – collecting and categorizing relevant data and needs based on their extensive experience and knowledge ([Abbott, 1988](#Abbott)); (b) Identification – identifying the source of the client’s problems and difficulties ([Hughes, 1963](#Hughes)); and (c) Resolution – addressing the problem to the subjective satisfaction of all stakeholders ([Abbott, 1988](#Abbott)). In other words, the knowledge that the professional calls upon to help her resolve problems is based on uniform, specific criteria for precise performance defined as guiding criteria for accurate performance of the respective occupation.

 Each of these laws uses a different method to define the uniqueness of the profession and, in each of them, the legislator or the courts sets different standards of performance as well as principles, restrictions, ethical prohibitions and rules of conduct according to the values deemed unique to the profession.

Max Weber (1947) defined authority as “the likelihood that certain specific orders from a given source will be met by a given group of people”. The degree of success of a quality engineer in a position does not depend solely on it, but relies to a great extent on the management’s support for it and on the behavior of all employees in the organization, In principle, many engineers find it difficult to cope with the challenges they face because of lack of authority and knowledge ([Ekroni, 2012](#Ekroni)).

## Why not all occupations are Professions and what then is a semi-profession.

Professions have been conceptualized as incorporated bodies of experts applying theoretical knowledge in practice ([Carr-Saunders & Wilson, 1933](#_Carr-Saunders_&_Wilson)). The members of the standard expert professions, medicine and law, are required to be highly versed in a body of theoretical knowledge and trained in a collection of appropriate skills and techniques. These tools are acquired in extended studies and training that include a long internship period and certification tests, and requires them to abide by an ethical code and internal regulations, and accept disciplinary procedures should they fail to do so ([Freidson, 1994](#Freidson1994)). In contrast, professions working in the fields of cyber technology, sports and music base their expertise on ongoing training. As they work, they analyze and assess where they went wrong and how they could prevent future mistakes ([Ericsson, 2007](#Ericsson)).

Professionals use their knowledge for the benefit of the public while protecting their knowledge regarding their clients. In other words, on the one hand, they (doctors, lawyers – see our definition above) are granted the status of providing services essential to the lives of their clients; yet, on the other hand, their work does not necessarily produce positive results for their clients (a patient may not recover and a lawyer’s client can be imprisoned).

Being a member of a recognized association empowered to supervise the professional’s education and qualification accreditation allows this professional and all the members of the association to assert a legitimate claim of ownership of knowledge, expertise in the handling of certain kinds of problems and jurisdiction in their field of competency. Achieving this right largely determines how much “power” the professional will have and how well the employer organizations will accept the professional association’s demand for a monopoly on professional knowledge and recognize its ownership of the professional jurisdiction.

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Worldwide, modern professors, as a professional group, have demanded and received recognition of their professional authority over three types of authority: collegial, cognitive and moral ([House, 1993](#House); [Picciotto, 2011](#Picciotto); [Smith, 1999](#Smith)). Recognized professionals enjoy control and autonomy in professional decision-making in their work ([Abbott, 1988](#Abbott); [Freidson, 1994](#Freidson1994)) in return for a commitment to ensuring that the company benefits from quality work and to showing their intention to provide quality service. The meaning of autonomy is that professionals, as individuals and as a group, can use their own judgment in selecting the relevant knowledge and techniques they develop based on abstract knowledge and the scientific validity of the profession’s jurisdiction to deal with problems that arise ([Abbott, 1988](#Abbott)).

## Apply this to the occupation of quality engineers – the sense in which these "soft skills" quality engineers are not professionals

There are three main types of organizations: (1) Organizations working according to government regulations, for example, pharma companies. In such organizations, the quality manager is involved in almost all processes, so his authority is high. His authority is conferred by law / standard. but clearly defined what his powers and no manager would oppose; (2) Organizations involved in the food industry and the like. Here, the quality manager name is also involved in processes but has less authority than in pharma companies. Nevertheless, the quality manager still has a strong standing; (3) Industrial organizations and service providers, which, in our opinion, constitute approximately 75% of organizations. In such organizations, the quality manager is considered a burden and in most cases is ignored or shoved aside for business reasons.

The stringent requirements of quality standards and the tightening of customer requirements have prompted organizations in Israel to appoint quality managers, even when not required to do so. The quality system (in Israel and abroad) in the organization usually operates according to a matrix system. A variety of measures are applied, some of them managerial and other technical or engineering.

The stringent requirements of quality standards and the tightening of customer requirements have prompted organizations in Israel to appoint quality engineers, even when not required to do so. The quality system (in Israel and abroad) in the organization usually operates according to a matrix system. A variety of measures are applied, some of them managerial, while others may be technical or engineering oriented. (1) Organizational Quality Manager; (2) Quality Engineer. Responsible for implementing the requirements of the quality system and excellence in the organizational units, where in most cases theoretical knowledge and qualification are required.

The quality engineering profession in Israel has grown almost without intervention by the establishment and without the influence of academic experts. In contrast to what is happening in the field in the world, there is no connection between academia and leaders in the field.

Today, the quality manager in the organization is one of the most challenging roles in any organization. Unlike other positions in the organization, the role of the quality manager is multid n nisciplinary, which means getting to know all the organization’s fields (marketing, production, maintenance, R&D and more) and, therefore, being a top-rate quality manager is a big challenge. Quality engineers are positioning as a leading company in the company, an important factor, a vital contributor to the company’s commercial success—and at the same time, working to see that they are not positioning themselves as an “enemy” or a development control department, but a true and important partner in the company’s development and business achievements.

Knowledge and competence in quality can be acquired in two ways: Through (a) non-academic educational tracks, which assert that the quality practitioner must receive theoretical and practical training, along with practical tools; and (b) academic-scientific tracks, which contend that the quality professional must obtain general knowledge along with practical means to understand and execute his or her professional role as well as glean professional insight.

The role of the quality engineer in most organizations is a job requiring “soft skills” ([Blades, Fauth & Gibb, 2012](#Blades)). There is no uniqueness attributed to the required knowledge and, therefore, their authority stems solely from the norms and practices within the organization employing them and not from a regulator.

This tension, in the author’s opinion, stems from the status accorded professional quality engineers here. The lowly status of quality engineering inhibits its institutionalization and is blocking it from becoming a field where only highly qualified and certified quality engineers.

The quality engineer status is determined by his level of professional knowledge in the field of quality and the extent to which the managers of the organization perceive him as a professional. Unfortunately, there are not many managers who think about quality and support quality managers. Furthermore, today there are organizations where the quality manager job is neither a full-time nor stand-alone positions; rather, it is integrated with another position. Also, some organizations (especially small and medium-sized ones) outsource quality issues. Because this type of organization is probably the most common, quality managers are not encouraged, to say the least.

Today, there is no correlation between a quality engineer and his success in the organizational culture. Quality leaders determine that a professional quality engineer can increase the company’s profitability. For example: the cost (for a company that does not employ a quality engineer) of financial damages following non-quality events in a single year is considerably higher than the cost expected to be incurred if a quality engineer is appointed ([Ronen, 2013](#Ronen2013)).

Globally, the profession of quality has not yet been defined ([Abbott, 1988](#Abbott)). It is regarded as a “profession in the making”—an area working toward building a clear identity as a professional field of endeavor and attempting to complete the sociological foundations that characterize professionals and base their demands on recognition and legitimacy ( \`

The lack of institutionalization of the quality profession in Israel and the world stretches the boundaries of acceptable standards and safeguards, and thus facilitates immoral behavior in the field of quality by organizations. Additionally, error making becomes far more likely when knowledge and understanding of quality are not standardized across a profession and the public interest is not a decisive factor in the decision making of organizational entities.

 The quality manager’s role is to plan and implement control and quality activities, while managing and collaborating with staff in documenting and maintaining the organizational quality standards. The role of the quality manager is not only to uphold these standards and other standards, but to establish and maintain continuous and constant communication with the organization’s employees, to lead participation in the maintenance of the quality standards, to document the quality system’s activities and to conduct quality control to identify problems and evaluate the work method.

# Chapter 2: Professional Authority:

## Epistemic authority.

The purpose of Epistemic Authority1 is to defend the rationality of belief on authority from the modern assumption that the ultimate authority over the self is the self. The consistent epistemic self trust commits us to trust in others, and that some of those others satisfy conditions.

The authority of professionals and their autonomy derives from the professional knowledge they acquire, from the responsibility for providing service and the power relations. Knowledge is used by members of the profession as a source of moral, public and social authority by virtue of the uniqueness and the preservation of knowledge and power attained by them ([Abbott, 1988](#Abbott)). The members of the profession unite into a group (a professional community), in which communication takes place among the members. The granting of professional authority is intended to give the experts control and supervisory powers. Professionals enjoy control and autonomy in professional decision-making in their work ([Abbott, 1988](#Abbott); [Freidson, 1983](#Freidson1983)) in exchange for a commitment to provide the company/society with high quality work and, where necessary, to show a service orientation. The meaning of autonomy is that professionals, as individuals and as a group, can rely on their judgment to choose the relevant knowledge and methodologies, based on their acquired knowledge, to deal with tasks and problems that develop ([Abbott, 1988](#Abbott)).

Abbott argues that, to date, there is no uniform pattern of development for a professional. Nevertheless, it can be said that each professional needs the public’s trust, and the more unique the professional’s occupation is, the more likely the profession as a group will be to lobby for laws that are exclusive to the respective professional practice, to ensure that their work is perceived as lawful and accorded legal rights and independence ([Abbott, 1988](#Abbott)).

Abbott (1988) described three arenas in which various professional groups work to validate and promote their claims to being members of a full-fledged profession: the legal arena; the public arena; and place of work. In Israel, the authority of recognized professionals is anchored in law, e.g., Engineers and Architects Law, 1958; Bar Association Law, 1961, etc. Each of these laws uses a different method to define the uniqueness of the profession and, in each of them, the legislator or the courts sets different standards of performance as well as principles, restrictions, ethical prohibitions and rules of conduct according to the values deemed unique to the profession.

Abbott defines “professional jurisdiction” as social groups that claim exclusive authority (monopoly) over a particular job and differentiate themselves from other professions ([House, 1993](#House)). In this situation, the work is seen as worthy and should only be performed by the members of the profession who enjoy rights and independence ([Abbott, 1988](#_Abbott,_A._(1988).)) by virtue of their knowledge authority.

Knowledge and competence in quality oversight can be acquired in two ways: Through (a) non-academic educational tracks, which assert that the quality practitioner must receive theoretical and practical training, along with practical tools; and (b) academic–scientific tracks, which contend that the quality professional must obtain general knowledge along with practical means to understand and execute her professional role as well as glean professional insight.

The authority given to professions based on the systematic professional knowledge acquired by their members is not universal. It varies by country. There are countries that recognize the professions in their jurisdictions legally, and countries that recognize them but without the regulator giving them recognition. In Israel, the authority of a profession is anchored in law.

There is no law in Israel and the world that defines what education is required of a quality engineer, but the importance of the role requires that those who fulfill the role of quality manager in a plant or organization must have knowledge about the world of quality, standards and laws, and everything that is required for the organization to meet all of these in the best possible way.

## Organizational authority.

Organizational authority refers to the hierarchy in a company from top level management to entry level employees. Levels of management that make up organizational authority include operation level, middle level and top-level management.

 Organizational authority allows people to take action and make important organization decisions. Organizational authority can be achieved by using chain of demand, line versus staff authority, delegation of authority, and degree of centralization. quality engineer base their authority on personal and professional relationships - hold organizational authority ([Ekroni, 2012](#Ekroni)).

In a conversation with quality engineer from a variety of organizations, they said that the quality as a Organizational authority. there for they have difficulty in persuading management to work according to the methodology they recommend and deal daily with resistance to quality initiatives. Consequently, often they have to capitulate a little, round corners and keep industrial.

Today, the knowledge acquired by a quality engineer is based on outdated and irrelevant theories that correspond to the second industrial revolution. The caliber of academic knowledge in the field of quality is not high, and studies done in the field of quality are not accepted in academia as trustworthy.

## Apply this to the Occupation of Quality Engineers – the sense in which of why this occupation has gaps in both types of Authority

It must be emphasized that the responsibility for product quality is not that of a quality engineer. It is the responsibility of everyone participating in the product’s preparation, but the duty of a quality engineer is to know the world of quality, standards and laws so that the organization meets them optimally. When the quality engineer is not perceived as a partner in the rganization’s business success, stakeholders do not bestow great importance to the demands of the quality engineering unit or personnel. In the Remedia example cited in the introduction, for example, “a quality engineer was not given authority via stakeholders, which caused the company severe financial losses” ([Ronen, 2012](#_Ronen,_Z._(2013).)). The cost of repair is higher after the product or project has been completed than the cost of preventing problems from arising in pre-production stages.

quality engineers deal with a variety of difficulties characteristic of the classic professions. They provide services and do not manufacture products; they create and maintain constant demand for the service they provide; they aim to convince their clients that their services are necessary and that these cannot be performed by untrained or unqualified individuals.

Although past and present quality engineers agree that they, as professionals, should have the knowledge and authority to do their job optimally, as noted, there are organizations that appoint employees who lack these qualifications or alternatively do not ensure that the quality engineer has sufficient authority to conduct her job properly. Often, this prevents other fully proficient quality engineers from performing their duties suitably because they are perceived in their organization as merely responsible for (ISO, etc.) certification rather than as professionals in their field and partners in the organization’s business success.

Accordingly, minimum threshold competence requirements must be set for candidates for quality engineering positions to ensure that they have the unique knowledge required of them to work in the field of quality. Moreover, the position of quality engineering as a profession offering commensurate renumeration and prestige, thus granting its practitioners the professional authority and the status of experts in the eyes of all stakeholders, must be established. Doing so will also offer quality engineers the opportunity to upgrade the standing of the profession and help them develop professionally and bring benefit to the organization and the client.

Professional expertise, such as in medicine and law, is based on a theoretical body of knowledge, a collection of skills and appropriate techniques. These tools are acquired in extended studies and in training that includes a long internship, certification and practical testing in the framework of the ethical code, internal regulations and disciplinary procedures ([Freidson, 1994](#Freidson1994)) of the specific professional association. The more members of the profession possess unique knowledge, the more likely they will be to adopt laws that guard the exclusivity of the professional practice. They will seek to be considered the only ones entitled to engage in this field of activity ([Abbott, 1988](#Abbott))

Because she is considered an internal assessor, and should be counted as a partner, a quality assurance engineer’s work will be more constructive if her colleagues perceive her work as fully professional and recognize it as professional expertise. Once they acknowledge her professionalism, they will cooperate with her and share areas of authority and responsibility. For a quality assurance engineer to perform his duties properly and create a quality system that includes all stakeholders and one that they will follow, he must interact with them from a position of professional authority and be involved in all stages of the activity.

Globally, the profession of quality has not yet been defined (Abbott 1988), and is now regarded as a “profession in the making” – an area working toward building a clear identity as a professional field of endeavor and attempting to complete the sociological foundations that characterize professionals and base their demands on recognition and legitimacy ([Picciotto, 2011](#Picciotto)). The lack of institutionalization of the quality profession in Israel and the world stretches the boundaries of acceptable standards and safeguards and thus facilitates immoral behavior in the field of quality by organizations. Additionally, error making becomes far more likely when knowledge and understanding of quality are not standardized across a profession and the public interest is not a decisive factor in the decision making of organizational entities.

# Chapter 3: Research

The study combines two methods: (1) a questioner was to examine the professional authority of the quality engineer, in light of these two senses of professional authority (2) a qualitative methodology, during which we conducted in-depth interviews with seven key quality personnel, who examined how they perceive their role.

In the qualitative model, I conducted interviews using a semi-structured questionnaire, and most of them lasted an hour to an hour and a half. The interviews were conducted and recorded by the researcher. Each interview opens with a presentation by the research editor himself, the purpose of the research and its structure. Since I wanted the interviews to create an atmosphere of complete openness and the interviewees to feel comfortable, I summarized what I was told in writing. All interviewees cooperated with me openly, and to my complete satisfaction and made a significant contribution to the study.

The study was based on a qualitative method and in particular on thematic content analysis, in order to identify patterns (mortality) within the data in order to reveal the visible aspects that will emerge in the dialogue with the study participants ([Braun & Clarke, 2006](#Braun)) Interviews were transcribed, coded and analyzed Three main themes: The analysis of the texts was carried out using the method of content analysis from summaries of quality peer meetings in the south and interviews and focused on thematic analysis with reference to the visible and hidden layers of each text.

To attack the content analysis of the interviews and to verify the credibility of the conclusions, data analysis partners) have knowledge and experience in qualitative content analysis, but not necessarily in the quality field.

The questionnaire was constructed on the basis of the findings of the interviews and literature. This questionnaire focused on examining the expertise and authority of a quality manager who combines the level of the structure: a quality manager in an organization as a profession in the making; System level: the definition of the job and its requirements as an outline for professional development and the personal level: professional identity and job perception.

The use of questionnaires gives the study uniformity as the participants are asked the same questions and in the same order. Also, since we used a closed questionnaire so that it was possible to make meaningful comparisons of the respondents, beyond the various questions and participants.

Quality samples aged 35–73 participated in the sample. They are all about quality - quality managers or quality engineers. The questionnaires were delivered from November 2015 to April 2017 to the quality people who are registered in the EIA database who attend the central quality conferences.

I used a non-probabilistic sample, it should be noted that the sample does not represent all those involved in quality.

The questionnaire was sent to some of the participants as an e-mail link sent to them via the Qualtrics system.

The questionnaire is divided into three parts:

1. Tool for examining the perception of the job, its structure and its limits from the point of view of those involved in quality;
2. Perceptions and expectations of the quality practitioner regarding roles as a professional field of knowledge;
3. Background data.

The analysis of the study data was performed using the SPSS Statistics data software. To test the reliability of the questionnaire and its consistency, I calculated the alpha Cronbach (0.906). This calculation examines how high the correlation between different items belonging to a particular index in the questionnaire is.

The results obtained were found to link the statement of reliability to variables related to moral authority (expertise, authority, and work according to professional ethics). This figure indicates a high correlation between the items in the questionnaire. Because using linear regression, the study hypothesis could not be answered, and given that the sample size obtained (n = 85) is smaller than the minimum sample size (n = 385), we used the SEM model using AMOS software to analyze a structural equation. Reliable results were obtained compared to those that would be obtained from regression analysis. This analysis allowed us to examine the variables ‘expertise’ and ‘authority’.

## Findings

## ***Quantitative Questionnaires – Knowledge and Qualification of Quality Engineer***

In most organizations, quality is managed by a quality engineer – a professional whose field of responsibility is quite flexible and, even more so, whose specific training is very broad. Even if the qualifications required by the quality engineering are not defined, there is no doubt that he faces high and binding expectations.

Two prominent people in the field, Moshe Ekroni ([Quality and Excellence Journal of the Israeli Society for Quality, 2012](#Quality50)), and Ehud Gitai, Director of the Quality and Accreditation Division to the Standards Institution of Israel ([Gitai, 2001](#Gitai)), addressed the issue of the professionalization of quality engineering. They noted three main characteristics of a quality engineer. She must have (a) relevant knowledge – a professional background relevant to the organization, (b) the ability to work on a team, including the ability to establish good communication with all interested parties in the organization, and (c) extensive knowledge of the quality profession. There should also be formal certification, the success of which confers a diploma, i.e., Certified Quality Engineer (CQE) ([Gitai, 2001](#Gitai)).

 In terms of the accreditation that a quality engineer needs, the data collected in the quantitative section indicate that most respondents believe that in order to ensure that a quality engineer provides benefit to the organization, the position must be conditioned by a certificate that attests to him possessing practical knowledge and professional tools.

All participants in the qualitative part of the study agreed that a quality engineer should be characterized, among others, by accreditation. For example, Moshe Ekroni explained that, in principle, “in order to ensure that a quality engineering will benefit the organization, the position must be conditioned by accreditation. This means that the qualification will provide him with practical knowledge and professional tools for a reasonable time”. The interviewees differed as to the type of training (qualification or academic degree) required for the job—internal training (Liat Milo, Moshe Akroni, Hanan Malin, Amnon Margalit) or certification by the ISQ (Dov Peri, Haim Kornfeld, Dr. Abraham Huli).

## ***Quantitative Questionnaires – The Authority of the Quality Engineer***

Sometimes the lack of expertise of a quality assurance engineer undermines her authority and, hence, her ability to act independently. In addition, there is often times a real contradiction between adherence to quality values (the ethics of those dealing with quality) and the organization’s cost-effectiveness (Moshe Ekroni).

The quantitative findings show the great importance of granting autonomy to the quality engineer. It was found that in business organizations, there is a link between the variables of authority and expertise.

All the interviewees argued that in light of the differences in the knowledge of those dealing with quality, the quality engineer needs authority so that his recommendations etc. are accepted by the organization and its employees and, so that he can ensure that all areas of knowledge in the organization cooperate with each other. Indeed, according to some interviewees, often the quality engineer is forced to participate in power struggles in advancing his field in the organization:

Keep in mind that the goal of the organization = profits. Quality is not always at the top of the order. Sometimes you’re forced to disqualify products (even if the potential profit is high) that do not meet the specifications. Employees do not always maintain the quality chain when there is a fundamental conflict between efficiency and profits to quality. The role of quality is sometimes perceived as a “delaying” job in the organization, and the inherent tension between operation and quality contributes greatly to this (Liat Milo).

As for the body that is supposed to grant the quality engineers authority, the interviewees disagreed. Some thought that the authority should be given to by the regulator (Haim Kornfeld, Dov Peri, Amnon Margalit, Dr. Avraham Huli), and others (Moshe Ekroni, Liat Milo) that the professional organization should help the organizations’ management internalize the importance of quality management in the organization and encourage them to build a supportive organizational culture. It was also suggested in the questionnaire that professionalization in the field of quality should give its practitioners a “collegial authority”—authority that exists in other recognized professions (medicine, law, academic professors, etc.)

## ***Interviews – Quality Engineer, Tensions and Conflicts***

The interviewees (Liat Milo, Moshe Ekroni, Dov Peri, Haim Kornfeld) noted that some limitations and barriers to the job exist. Others said that the restrictions and barriers are dependent on the organization (Amnon Margalit), e.g., prioritizing marketing at the expense of quality (Liat Milo), and appealing to the quality engineers’ lack of authority.

For example, Amnon Margalit says, “I often experience a clash between the realization of quality solutions and the time of delivery of a system to the customer.” These barriers limit his authority and impair his ability to perform his duties and be a partner in the organization’s business success. As for the claim of duality in the quality manager’s role (vis-à-vis the organization versus the customer), the interviewees agreed that quality engineers themselves do not see a duality but other stakeholders insist it exists. A quality engineer sees his role as helping to sustain the organization.

From the interviews, we learn that a quality engineer must adapt the procedures and work instructions to regulations and standards and make these accessible to all other employees through management. Sometimes this goal is thwarted by the quality engineer’s lack of knowledge and sometimes by the lack of the quality engineer’s authority, and as a result, the noncooperation of other workers with him:

Failure to address quality in one of the organizations caused financial losses, due to the lack of expertise of the quality manager. In an appeal to another quality engineering in the same organization to examine the problem and try to help, a lack of cooperation with the stakeholders was found, which made the decisions negligible (in my opinion, an excess of ego and blame)...Cooperation was only reached after the workers realized that they are beginning to lose their jobs, which eventually led to the resignation of the CEO. (Dov Peri).

A few years ago, I initiated and led a comprehensive organizational analysis of one of the business divisions, and this was not welcomed because I pointed out resolving problematic issues (in my opinion) would cause significant changes. After the management understood the value of the process, it mobilized and made changes across the division in order to address a significant portion of the issues that arose (Moshe Ekroni).

The analysis of the interviews thus strengthened the insight that the expected degree of success of the quality engineer is related, among others, to the manner in which the other stakeholders in the organization perceive him.

## Discussion and Conclusions

This study examines the professional status of a quality engineer based on the experience of quality practitioners as professionals in the context of two key terms: expertise and authority. On the one hand, his professionalism and expertise are not fixed and uniform. On the other hand, his authority in the hierarchical structure is unclear.

The activities mentioned as falling under the scope of the role of the quality manager (promoting quality and excellence in the organization, instilling a culture of quality among all stakeholders, i.e., leading change and improvement with an emphasis on changes in process infrastructure and management routines, taking responsibility and authority to bring significant added value to the organization etc.) can be understand as defined by Giddens (1984) as conscious actions carried out by agents that cause a change in the social structure through the process of construction. Giddens’ structural theory assumes that the agents who carry out the processes in the construction process are internally motivated and are aware of the results they wish to achieve through their actions. In terms of quality managers, their motivations are known not only to the themselves but also to those around them. These agents, however, are not equal in the construction process, as expressed by Giddens (1984)—a fact reflected in this study.

The findings also reveal that the main obstacle facing quality is the desire of each organization to maximize its profits in the short term, even at the expense of deviations from quality. Another barrier, which makes it difficult for those involved in the field to establish proper working relations and authority, is its image in many organizations as obliging other workers to engage in a lot of paperwork. It was also found that certain characteristics of Israeli society cause other stakeholders in the organizations to challenge the quality manager's opinion, thereby impairing his ability to perform his duties and limiting his authority and willingness to attribute to him a partnership in the organization’s business success. These deficiencies often cause tensions and conflicts between him and other stakeholders in the organization.

When the interviewees were told that according to the literature, the means to strengthening the status of those engaged in quality and ensure that they have the authority they need are partly in line with the research literature that requires business to recognize quality engineering expertise by granting it professional rights ([Abbott, 1988](#Abbott)), not all the interviewees agreed with this statement. Some did believe that authority should be given to quality practitioners by the regulator, by granting them the status of professionals. In opposition, some thought that authority should be given in the workplace. The interviews and the survey show that the status of a “profession in progress” prevents a quality engineer from being recognized as an expert in his field and creates tension between expertise and authority.

This situation requires every quality engineer to establish his status in the organization to which she belongs based on the relationship she builds with interested parties. In addition, this extended process is often acerbated by the fact that the quality manager, in performing her duty, usually does not produce immediate results.

The research assumption, supported by the research literature, was that many professions, especially professional professions, define requirements for training, education, and qualification in order to distinguish between workers with general qualifications, practical knowledge and experience and those with certified qualifications, theoretical knowledge and higher education in the fields of knowledge or occupation. Training requirements are often a condition of engagement, and their violation is sometimes accompanied by sanctions prescribed by law to maintain social order ([Giddens, 1984](#Giddens)).

Not all of the concepts that Giddens coined (1984) are consistent with the findings in the study. For him, the social system differs from the social structure in that while the social structure is amorphous and constantly changing in space and time through the action of agents, the social system is constant in time and space and cannot be changed. In addition, while the action of the individual is embodied at a certain point in time of the social structure, the system is a separate entity from the agent, and it influences it from the outside.

The nature of the quality manager’s role in all the organizations is constant and involves carrying out measurement and evaluation tasks and tasks aimed at making the company profitable. This activity varies from one organization to another, and is, therefore, not done consciously and automatically. No uniform rules are created (behavioral structure). It is routine activity that creates the social structure, and the social structure limits the individual’s behavior because it is based on the laws of behavior ([Giddens, 1984](#Giddens)).

It should be noted that the interviewees believe that a professional society should act to improve the quality engineer’s position of authority. According to them, it should help the management of organizations internalize the importance of quality management in the organization and encourage them to promote a supportive organizational culture. A third suggestion was that professionalization of the field of quality would give practitioners in the field “collegial authority”, as is the case in some well-known professions (medicine, law, engineering, etc.) ([House, 1993](#House)).

## Limitations and Practical Implications

Being a quality engineer requires mastery of professional and organizational knowledge and skills. If those engaged in the field undergo long-term training and dedicated specialization, they will be able to fulfill their duties properly. The boundaries of the job will become clear, and there will be justification for institutionalizing the profession on a national level.

The main limitation revealed by this study is that the quality profession is perceived in a comprehensive and broad manner, without distinguishing between quality areas. I believe that research regarding the influence of expertise on the authority of a quality engineer in all areas of knowledge can contribute greatly to advancing the issue and to influencing industry leaders to act according to clear policy and systematic methodology. The ability to apply the findings of the study to everyone in Israel, and the world, dealing with quality is limited. Further, given that the sample in the qualitative section was not randomly selected from the population but comprised volunteers who responded following contact with them must be kept in mind when looking at the study’s conclusion. The sample in the quantitative part is homogeneous in several parameters: all are veteran quality practitioners. The vast majority are members of the Israeli Quality Association, which affects their location in the field. Moreover, the research was conducted over a period of two years, during which changes may have emerged that are not reflected in the study.

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