

# **ISO 9001 and Small Companies**

a vehicle for growth and maturation

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## 1. Introduction

### Background

Small and large corporations have met an increasing demand for quality certification according to the ISO 9000 regulations. The ISO 9001 is the most comprehensive of the standards providing guide-lines for third party audits and certification of supplier firms, which besides manufacturing are also involved in development of the products supplied.<sup>1</sup> The standard prescribes that the supplier firms are required to have a documented quality system including descriptions of work tasks, report routes and documents. The value of this certification process for a small company has been questioned, see e.g. Bergman & Klefsjö (1991). The documentation process has been seen as a waste of time, putting a lot of effort on producing documents instead of practical work to improve quality.

It is well-known that small firms which grow rapidly might stumble for various reasons, including an increasing difficulty for the entrepreneur to keep track of every detail in combination with a limited ability for delegating authority. The ISO 9001 provides a route to more structure, hence there seems to be a potential of assisting a small entrepreneurial firm in its growth process.

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1. In the U.S. the ISO 9001 international standard is called Q91 and it is part of the ANSI/ASQC Q90 series of standards. In the U.K., BS5750 part 1 corresponds to ISO 9001.

The purpose of the present study is to analyze the effect of a third party certification process according to the ISO 9001 on the growth process of small entrepreneurial companies.

This study is based on a analysis of inhibiting and facilitating factors of small companies' growth found in literature, in comparison to the requirements and structure of the ISO 9001 certification. The practical effects of an ISO 9001 certification process is illustrated by an in-depth case study of a small chemical company, based on Bengtsson (1992).

## 2. Company growth and ISO 9001

### 2.1 Company growth - theoretical perspectives

According to Penrose (1959), there are three classes of explanations as to why there may be a limit to the growth of firms - managerial ability, product or factor market, and uncertainty and risk. The first and third refer to factors that, at least partly, are internal to the firm. There is physical maximum to the number of things any individual or group can do, which indicates that the capacities of the existing managerial personnel place a limit on expansion. In addition, if suitable persons can be hired, there is still a period of learning for each new hiree as well as a need for the whole management group to gain experience together in order to work efficiently. The opportunities for gaining the needed experience in turn depends on the plans and actions that the previous management succeeded to develop. When a firm grows, a progressive decentralization of authority (delegation) is a necessary condition for continued growth beyond a relatively small sized firm.

Risk and uncertainty do affect the amount and variety of managerial services needed for expansion. Penrose separates between two kinds of uncertainty, subjective and unavoidable, where the subjective refers to the uncertainty as perceived by a manager. One of the most effective ways of reducing this "subjective uncertainty", is to obtain more information. To obtain information requires input of resources; evaluation of that information requires the services of existing management. As a company grows, more decisions can be taken by management as a team, and not the founder-entrepreneur by himself. Then, the information required becomes more standardized and planning becomes subject to defined procedures. Hence, in principle, subjective uncertainty will limit expansion only to the extent that managerial resources are limited.

At a certain point it is either impossible or too expensive to obtain more information. The company is then facing a situation with "unavoidable uncertainty" and has to take a risk expanding. However, it is nothing that prevents the company from expanding in another direction. Each new activity requires increased input of managerial services, and if the new activities are less familiar, more efforts are required. Hence, there is once again a limitation in terms of available managerial resources. Risk is mostly judged in relation to the financial position of the company. If the company's existence is at stake, then the entrepreneur might be less willing to expand. There are however ways of expanding without increasing the risk to a great extent. For example, diversifying to spread risk, short run flexible programs, or different ways of limiting the liability by setting up subsidiaries able to borrow own money. But all ways of reducing risk have an impact on the demand for managerial services and the greater is risk or uncertainty, the more difficult will be the managerial task. Hence, expansion plans are restricted by the capacity of the management

team.

The way companies are started, grow, mature and die, has been compared to life cycles of living organisms. Most life cycle models are based on an assumption of a growth in stages, which companies go through during their development (see e.g. Greiner 1972, Steiner 1990). The development does not, however, necessarily take a linear route through the different stages. Some companies might "stay" in one of the earlier stages because of managerial decisions or due to other limiting factors.

In the present study we are not concerned with the type of companies where the owner/manager has decided to stay small and primarily provide for the living of himself and his family. Instead, we focus on small entrepreneurial companies which are in a growth process.

Entrepreneurial companies go through different phases when they grow. Flamholtz (1986) indentifies four different stages of growth: new venture, expansion, professionalization, and consolidation. During the first two phases, the entrepreneurial capability is the most essential, while in the latter two, there is a need for a more structured, planned and delegated form of management.

Churchill & Lewis (1983) use a framework of five stages of business growth labeled: existence, survival, success, take-off, and resource maturity. They argue that, as a business moves from one stage to another, different company resource and owner capability factors become of prime importance. They state that one of the most essential factors during the take-off stage concerns the owner's ability to delegate. In addition, the owner's strategic ability for looking beyond the present, as well as acquisition and maintenance of financial, people and systems resources are essential.

Clifford & Cavanagh (1985) identify the staggering task of midsize high-growth firms as being that of transplanting the intuitive skill of the founder-entrepreneur into a large, changing organization. The key to meeting that challenge, they argue, lies in combining the discipline necessary to execute the day-to-day activities of the business with the freedom to adapt to a changing world. Growing companies must learn to handle these conflicting needs in a successful manner. The same conclusion is made by Fombrun & Wally (1989) in a study of fast growing small companies.

Another complimentary way of looking at the same issue is to study the most frequent and serious barriers inhibiting growth for a small firm. Barriers to growth have been listed in various studies (e.g. Clifford & Cavanagh 1985 and Flamholtz 1986). They focus on missing resources in general, but specifically on the human limitations within the firm, among which are the entrepreneur/owner's ability to grow with his company and leave the "one man show" in favour for a more delegated management style.

Flamholtz' (1986) list of ten "common organizational growing pains" is a representative example of symptoms of this kind of barriers.<sup>2</sup> The common denominator for Flamholtz' growing pains indicates the personnel's need for more structure and clarity of work responsibilities and relations to other employees and departments of the company, as well as the need for an understanding of the

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2. Flamholtz (1986) list of growing pains: 1. People feel that 'there are not enough hours in the day'; 2. People spend too much time 'putting out fires'; 3. People are not aware of what other people are doing; 4. People lack understanding about where the firm is headed; 5. There are too few good managers; 6. People feel that 'I have to do it myself if I want to get it done correctly'; 7. Most people feel that meetings are a waste of time; 8. When plans are made, there is very little follow-up, so things just don't get done; 9. Some people feel insecure about their place in the firm; 10. The firm continues to grow in sales but not in profits.

major goals for the company.

Innovation processes, as such, have also been described in terms of life cycles. According to Abernathy & Utterback (1978) the innovation process can be viewed in two steps, where the initial product innovation is followed by process innovations. In a small "one product family" entrepreneurial firm, the innovation process sometimes goes hand in hand with the development of the firm as such. One major difficulty has been for the new firm to develop the second generation new product. Especially so, in those cases the new firm was a spin-off from a larger firm, where the basic product idea for the first product had been nurtured but had not been allowed to develop further. Particularly small high-tech firms might stumble on this threshold, which essentially consists of a combination of technological resource related and market barriers. However, the general model, as such, corresponds to the earlier mentioned firm development models in terms of emphasizing the need for a more structured organization during mature phases.

In summary, the studies of company growth identify a number of critical factors: financial and human resources, systems for information, planning and control, and managerial and strategic capabilities.

## **2.2 The relevance of ISO 9001 for a small growing firm**

If we look into the content of the ISO 9001 document, it prescribes what a company should have, although it normally does not indicate the particular design of each specific area mentioned. What might have direct relevance for a small growing firm is that it indicates that a company must have written documentation on all work tasks and the relationships between the different jobs. This includes prescriptions on the level of detail of specific

reports and communication documentation. The guide-lines are essentially static and only to a limited extent include the notion of the use and even less so of the results of the implemented measures.

Hence, the ISO 9001 provides a guide-line to develop an internal structure within the firm but does not directly influence the development of managerial capability or practices. However, the process of documenting the work tasks and their relationships has a potential of functioning as an aid for a manager/owner who tries to change his organization towards an increased level of decentralization and delegation.

### **3. The case of a small chemical company - effects of implementing an ISO 9001 system**

In what ways does the implementation of a certified quality system affect a small, fast growing firm? Can this be an aid to such firms in becoming more mature and professional?

BIM Kemi AB is a typical fast growing entrepreneurial firm which received its ISO 9001 certificate in 1989. The study is based on in-depth interviews inside the company and direct observations on location. In addition, interviews were conducted with 14 customer companies.

#### **Background**

BIM is a Swedish producer of specialized chemicals for the paper and board industry. The firm was founded in 1974 and it has since had a steady growth. The number of employees tripled from 1984, to 75 in 1990. From 1984 to



1987 the turnover doubled and from 1988 to 1990 it doubled again. In 1990 the turnover reached over 100 MSEK (17 MUS\$). As a result of this expansion, the firm had begun to experience what is sometimes referred to as "growing pains". The managers were often overloaded with work and had little time left for strategic planning. In most departments, there was a general sense of disorder due to unclear roles; there were few routines for formal communication. Fast growth is, however, an important part of the firm's strategy and the founder-owner was firmly resolved to stay as CEO even though he was well aware that continued growth would necessitate for major changes. In order to create the necessary conditions for growth and development, the company has hired highly competent personnel such as a former Professor of Chemistry as Director of Technology. In addition, the chairman of the board (a former bank manager) has begun working as head of administration and economy. There was however, when the managers at BIM first heard about ISO 9000 from their customers in 1987, a great need for restructuring and preparation for continued growth.

### The project

In the beginning of 1988, the CEO decided that the firm should develop a quality system according to ISO 9001. The deadline for the project was set for early 1989. A quality controller was appointed to coordinate the project and the quality activities. The first step was to develop a written formal quality policy which described the goals and visions in the field of quality. When the policy had been established and communicated to the organization, the departments took over and started to develop written job descriptions for all employees which described the authority and responsibilities of each one. The routine procedures of all employees were briefly described and documented. Old routines were formalized

and new ones were developed in order to assure the level of quality. Implementation was performed in somewhat different ways in different departments, in some cases two persons were responsible for and did most of the work in others, all employees were directly involved in the documentation of routines. As will be seen later on, this had effect on how the system was adopted and how it worked.

The whole project was managed and carried out by the company's own personnel. Not using consultants was prescribed by the entrepreneurial philosophy of the firm.

The certification audit was performed by SIS, The Swedish Institute for Standardization, who scrutinized the quality system. SIS is, unlike BSI in Great Britain, not advisory and does not help companies in developing quality systems.

#### Effects on major departments

Let us take a look at what these changes meant to the major departments.

##### 1. Marketing

In the marketing department, the most important changes and effects of the project were:

- \* Documentation of product development projects,
- \* More follow-up of product development projects,
- \* More reports from customer visits are written,
- \* A more formalized method for choosing among ideas for new products,
- \* Through being certified, gaining contacts with customers that are certified,
- \* Keeping product specification sheets up to date.

The project has also created a greater clarity and structure; a better understanding of what every one should and should not do.

## 2. Laboratory

The laboratory department experienced a number of positive effects of the quality system:

- \* Written descriptions of all analyses,
- \* More control of raw material and finished products,
- \* Written descriptions of acceptance criteria for raw material and finished products,
- \* Job descriptions and documentation facilitates the education of new employees.

By receiving rules and criteria, the employees can work more independently and feel more secure in doing so. They do not have to contact the managers for decisions as often as they used to.

## 3. Production

The major effects in the production department were:

- \* Every batch of raw material is given an identification code, which makes it possible to trace the causes of defects in products,
- \* Fewer complaints are received from customers mainly because of more extensive control.

### Discussion of effects

In all departments, the job descriptions and improved structure have made it easier for managers to delegate authority. Fewer tasks "fall between the tables" while overlapping work is held at a minimum. This is important because increased delegation is necessary for freeing

management from day-to-day problems in order to give them time to deal with strategic issues.

The production department is, to a higher degree, controlled by the laboratory. At the same time, the marketing department has more control over what is done in the laboratory. In this way, signals from the market have more influence on the marketing-laboratory-production chain. As a result, all of these departments have a stronger customer orientation.

The increase in documentation, especially in the field of R&D, has created greater opportunities for use of the knowledge created in product development in future projects. This has also made the organization less dependent on key individuals, with more of the knowledge of the firm being documented and stored in a secure way.

The increased administration with more reports and documentation has made employees more used to working in a structured manner, sending and receiving written messages holding pre-planned meetings with written agendas and so on.

Increased ability to trace errors in the production process has given the company greater opportunity for working with problem-solving in a pro-active manner, so that they can focus on understanding the origins of problems and therefore prevent future problems instead of reacting to present ones.

It could be observed that, in the departments where all personnel were involved in the implementation, the system was more quickly adopted and routines were actually followed to a greater extent.

### Customers' views

How have customers reacted to BIM Kemi implementing and working with a certified quality system?

Almost all customers surveyed are generally positive about ISO 9001 and suppliers with such systems. They are of the opinion that holding a certificate and using a quality system has little or no effect on the level of product quality per se, at least not in the short run. However, being certified is considered important because suppliers with certificates are viewed as more reliable and trustworthy. The customers say that they feel more secure when they do business with certified suppliers.

Being certified has in some cases been important when selling to foreign customers. British and Finnish customers in particular prefer suppliers which are certified according to ISO 9001. The certificate can, to a certain extent, compensate for the fact that BIM is a small and relatively unknown firm.

### Negative effects

So far, only positive effects have been mentioned. Was the ISO 9001 certification process and quality system actually as effective as it has been described here? No, of course there were a few problems as well.

The greatest problem has been the increased documentation. Employees were not, as it has been mentioned before, used to doing lots of paper work, and have offered some resistance to this. People say that documentation and keeping routine descriptions up to date "steal" time from what they "should" be doing. However, these reactions can be regarded as temporary, since the employees go through a learning process in which they

must learn to do their jobs in a different way. Learning always takes some time.

The system initially developed was of course not the perfect system as situations change continually. People are working all the time to improve and adapt the quality system. This process takes time, but it also improves the firm. "Now we are working like we should have been all the time", the quality controller says.

### The future

Quality has always had a high priority at BIM. It was therefore natural that BIM was one of the first firms in Sweden to use the ISO 9001 standard. They now understand that certification, however important, is just a first step, and that the real challenge lies ahead: improving the quality system and making real use of its potential benefits. In order to have a clear next goal to strive for, BIM has been considering using the Swedish Quality Award (A Swedish equivalent to the Malcolm Baldrige National Quality Award).

### Conclusions from the case study

The implementation of an ISO 9001 quality system at BIM Kemi was started mainly as a reaction to customer demands. This has, as has been shown, affected the firm's manner of functioning in a number of positive ways. Today, the company has a structure that better corresponds to its size, employees have become more used to administrative tasks, the division of labour is much clearer and, not least important, there is an on-going discussion inside the company about how further improvements can be implemented.

#### 4. Discussion

The ISO 9001 standard was designed for third party assessment, i.e. an independent organization performs a quality audit and assesses the company's quality system according to the requirements of the standard. The goal of passing an examination in order to receive a certificate can function as a very clear motivator for a quality project. The system provides the prerequisite for the possibility of mobilizing all the forces in the company. Ideally, all departments and all personnel should have to take part in the process. In all departments, the individuals must scrutinize their organization and procedures thoroughly. This brings to the surface unclear areas and different opinions about how the job ought to be done. This can be a first step towards creating a corporate culture where it is natural to be critical about and to question existing ways of doing things.

The involvement of each individual in the practical change work is not, however, anything that happens automatically or is even prescribed in the ISO standard. In reality, several different process forms can be identified, with an external consultant doing all the required paper work, on one extreme, and the total involvement of all personnel, on the other end of the spectrum. There are several intermediate forms involving consultants as process moderators and trainers. The above described case, where the company itself takes full charge of the process, without any external assistance, is not as common.

To make this kind of scrutiny of the organization seems to be of particular value to companies which are in a

period of rapid growth. Fast growing companies often find themselves in a situation where there is a mismatch between size and its structure. Procedures and organizational structures have often been developed in a somewhat haphazard manner, making a comprehensive overhaul of the company, a kind of organization development project, necessary. The implementation of a quality system can be an important part of such a project where the ISO 9001 standard can serve as a guide-line.

For small companies in particular, the difficulty in accomplishing delegation of responsibility can hamper growth, especially when the entrepreneur and his closest collaborators feel the need to be involved in the smaller details of the business. The clarification and documentation of roles, work tasks and their relationship to each other can be of great help to attain a more decentralized organization conducive to growth. It should be pointed out that the capacity of the existing management team sets a limit for the expansion of a firm. The management team is a collection of individuals who have had experience in working together so, additional management cannot simply be hired at the market-place (Penrose 1959). The common experience of the team cannot be transferred through documents, but must be learned by concentrating on doing the job with the other individuals. However, as has been shown in our case study, as well as in other studies, the existence of a documentation of work roles and relationships simplifies and speeds the process of integrating a new employee into an organization, be it an operator or a new managing director.

The potential advantages of an ISO 9001 process are not limited to small growth companies. In interviews we have found that similar benefits occurred in larger growing companies during organizational transformations (Alänge et al 1993). In these cases, the same type of problem



exists, i.e. new work roles and assignments for which no documentation nor any established practise have been developed. The ISO 9001 process can, in such a case, provide benefits by assisting the organization to find its new working format.

The ISO 9001 standard is of a static nature and does not require any improvements beyond the original level of acceptance. The standard does require for instance, that the company shall have routines for corrective actions, taking appropriate measures to prevent recurrence of nonconforming products. On the other hand it does not require the company to show objective evidence that such corrective actions actually have taken place and that the number of nonconformances has been reduced. Hence, the standard requires a system for improving quality but is less concerned with to what extent this system really is used or if it is providing the desired results.

The standard is not, and is not meant to be, an eye of the needle through which only top performers can pass, but a high-jump bar at a moderate level that any serious company could pass with a little effort. Consequently, the requirements in the standard are not very strict.

Because of the relatively low requirements of the standard and the static nature of these requirements, the standard is not a good incentive for continued change and improvement. A quality system developed according to the standard does prepare the ground for further improvement by providing the procedures, administration and organizational structure that are needed.

It is important though, to be aware that the process towards a certificate is only the first step. The real benefits can only be attained when the certification process becomes an integral part of a total quality management effort. Several studies (Leimalm & Andréasson

1989, Berglund 1990, Rayner & Porter 1991, and Bengtsson 1992) indicate that companies that consider quality to be of strategic importance are most satisfied with the effects of implementing a quality system. These companies understood at an early stage (however, not necessarily directly from the very starting point) that there was much more to it than just barely fulfilling the requirements of the ISO 9000 standard.

It has been shown to be of vital importance to have a top leadership, which involves itself in the process by setting tough but attainable goals, showing a visible engagement and genuine interest in the process, and also by understanding that ISO 9001 is not the goal but a means. Rayner & Porter (1991) found in their study of 20 UK small and medium-sized firms that the attitude of the chief executive was the prime determinant for if a company would regard quality as of central importance for the management of the company. Hence, they stated that quality management is inextricably mixed with the overall management of the business and concluded that "Good management will use BS5750 (ISO 9000) as a tool to improve the efficiency and effectiveness of the business, while less competent managements will fail to take advantage of what BS5750 certification can offer."

The ISO 9000 certification process does not automatically contribute to empowerment of all employees, which has shown to be essential in order to fully reach a state of continuous improvement. Instead, empowerment, which is based on alignment, capability and mutual trust (Tenner & DeToro 1992) is essentially a management task.

From a market expansion perspective, ISO 9001-9003 certificates are becoming more and more important. In many industries, especially in the German and the British markets, it has started to be more difficult to do business for companies that are not either well known

with a good reputation or certified according to the ISO 9000 standard. This makes ISO 9000 certification even more important for small growing companies that want to expand into new markets where they are relatively unknown. In Britain, it has even shown to be a definite 'entry barrier' in some industries, such as paper and pulp. In addition, there are indications that third party certification according to ISO 9000 will be entered as a requirement for doing business within the European Single Market through "preferred supplier policies" (IJQRM 1991).

Several studies of growing companies (e.g. Churchill & Lewis 1983) stress the importance of dealing with growing pains before they appear. The ability to envision what the company will be like in a few years time, what problems that will be encountered, and what resources will become critical is seen as very important. Management is often good at envisioning and planning for external changes, such as increasing turn-around and expansion into new markets. The necessity of internal changes that follow from growth or that are prerequisite of growth can be harder to recognize. Moreover many entrepreneur-CEOs do not even want these changes to occur, but would prefer the structure and the atmosphere of the small firm to remain unchanged throughout the growth process. This stresses the importance of a tool or a guide-line for internal transformation and development. So, even if implementing a quality system at first sight seems to be complicated, bureaucratic or even unnecessary for a small company, the system might turn out to be a natural part of the company in a few years' time .

Although the above discussion shows that the ISO 9000 certification process under certain conditions can function as a tool for quality improvement and an assistance when a small company grows, it is essentially a static tool. In comparison, awards such as the Malcolm

Baldrige National Quality Award and the European Quality Award have greater in-built potential of working as a driver for change. The Baldrige and the European Awards, like the ISO 9001, ask if a system is documented, but put the major focus on the implementation of the system and even on the results of the implemented system.

## 5. Conclusions

The ISO 9000 certification process can be used as a means for facilitating growth in small entrepreneurial companies. The main contribution is that it remedies some of the growing pains by forcing the company toward more structure by documenting and thus considering and developing work tasks and relationships between them.

The real efficiency of ISO 9001 as a tool for quality improvement and growth is totally dependent on the firm itself and its management. It is up to the company to decide upon where to put the cross bar, i.e. the company must use goals far beyond the mere spur of certification in order to make a major impact.

In sum, there is still some validity in the words of Dr. Juran, who stated, that one should involve oneself in ISO 9000, but not let it interfere with quality work. However, we believe that ISO 9001 can be used as a driver for organizational change, provided that the management understands its role and limitations. In such a case, the ISO 9001 can provide dynamic input both for company growth by providing structure, as well as contribute toward total quality. However, ISO 9001 can never be more than one contributing factor toward attaining a state of continuous improvement and striving for total customer satisfaction.

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