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## ISO 9000: is it panacea for small businesses in developing countries?

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**Abstract:** With the advancement of technology and the opening up of more countries to trade, entry into the global market is becoming easier. Equally, the need for products to meet consumer expectation is increasing. The International Standard Organization (ISO) sets processing standards for products sold in the global market so that consumer expectations are met. Producers are expected to ensure quality of product and services provided by adhering to standards set by ISO at all levels of the production process. The benefits resulting from earning ISO certification are so significant that producers and exporters are putting their best efforts to acquire ISO certification. However, because of the high costs involved, companies with limited resources in both the developed and more so in the developing countries are at a serious disadvantage. Potential policies to address these issues are explored in this paper.

**Keywords:** ISO 9000; quality management standards; high quality services; total quality management; services; standards.

**Reference** to this paper should be made as follows: Singh, G. and Rustagi, N.K. (2012) 'ISO 9000: is it panacea for small businesses in developing countries?', *Int. J. Services and Standards*, Vol. 8, No. 1, pp.58–73.

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## **1 Introduction**

ISO 9000 may seem daunting for small businesses in many developing countries of the world but is still seen as an important quality management system that ensures reputation of businesses in any situation. ISO 9000 is an internationally recognised standard and serves as a good foundation for small businesses wanting to expand their market penetration by strengthening and improving quality related issues. Goal of all small businesses is to satisfy customers, stakeholders and employees, and to achieve this they need to implement some Quality Management Standards. ISO 9001 an international quality management standard has rapidly become the most popular quality standard in the world. Thousands of organisations in different parts of the world have adopted International Standards Organization (ISO) standards and many more are in the process of doing so. Firms that adhere to these standards are ISO-certified meaning that they have followed the procedures required to assure quality product or service and thus are qualified to sell their products or provide services in member countries that require such certification. ISO 9001 applies to all types of organisations irrespective of their size and type. It can help both product and service oriented organisations to achieve standards of quality that are recognised and respected throughout the world. ISO is all about establishing, maintaining and continuously improving a quality management system in the organisation. An organisation whether small or big if certified with ISO will conform to the standards and increase customer satisfaction.

Application for certification requires documenting the implementation process to enhance the checking of compliance with the ISO standard by authorised bodies or registrars either for certification or auditing and maintenance of certification. “Traditionally, two major hurdles have been cited as barriers for entry of small operations to world ISO management systems. The first is cost and resource requirements for implementation, certification and ongoing compliance. The second is relevance” (Walch and Sutcliffe, 2006). In the past, small business owners were expected and even pressed hard to know how the ISO system that applies to globally manufacturing giants relates to small businesses. However, with the introduction of websites by ISO relating to ISO 9000:2000 and ISO 14001:2004 standards, small businesses can get the benefit of implementing quality and environmental management systems by surfing these websites thereby enhancing their chance of getting ISO-certified. The main purpose of this paper was to gain more insight into the rationale of ISO 9000 certification by small businesses and also assess the potential problems and benefits associated with implementation of these standards. The paper presents some evidence for the use ISO 9000 certification by small businesses and also assesses the potential problems and benefits associated with implementation of these standards. The paper also highlights the issues of globalisation, competitiveness and quality related issues of ISO 9000 and also the options that are available to small businesses.

The rest of the paper is organised as follows: Globalisation, competitiveness and quality related issues are presented in Section 2. In Section 3, ISO 9000 and benefits derived from it are presented; while the issues of small businesses and their journey towards quality are presented in Section 4. Section 5 discusses the options that are available to small businesses; while Section 6 presents challenges for small businesses and governments of developing countries. Conclusion along with implications for future research is presented in Section 7.

## 2 Globalisation, competitiveness and quality

With the integration of markets across the globe, more and more companies are focusing on their core competencies while outsourcing activities for which they do not have a strategic advantage. In response to this outsourcing opportunity, small businesses in developing countries are assessing their core competencies to align themselves with needs of the global market and build alliances with organisations within and across borders. We should emphasise though that ISO certification of a company does not mean certification for all the products it produces or services it provide. It means for one or more of the products it manufactures or services it provides. It is certain though that a minimum of that many products or services are ISO-certified.

The number of ISO-certified companies has increased significantly since 1998. As of December 2007, the number of ISO-certified companies in the USA out of which 50% are small businesses has increased to 36,192 companies (see Table 1). The factors for such an upsurge of ISO certifications are first, the insistence of corporate clients for quality of components supplied and second, desire of small and mid-sized business owners to enhance their chance of getting into the global market. The prediction that 'The pressure for small companies to be ISO-9000 certified is absolutely increasing and will continue to increase' (Meyer, 1998) is proving to be true with each passing moment. Study conducted by Terziovski and Power (2007) found that organisations can effectively use ISO certification as a means of promoting and facilitating a quality culture, where the quality auditor is an important player in the process. The importance of ISO certification has appealed to companies all over the world that the number of ISO-certified companies has increased by many-folds in a matter of four years from December 2005 to December 2009 (see Table 1).

**Table 1** ISO 9001:2000 certifications worldwide growth from end of 2005 to end of 2009

<i>Region</i>	<i>Dec. 2005</i>	<i>Dec. 2006</i>	<i>Dec. 2007</i>	<i>Dec. 2008</i>	<i>Dec. 2009</i>
Africa/West Asia	48,327	71,438	78,910	73,104	77,408
Central and South America	22,498	29,382	39,354	39,940	36,551
Europe	377,196	415,169	431,479	455,332	500,319
Far East	247,091	300,851	345,428	356,559	398,288
Australia/New Zealand	19,092	19,590	8715	10,001	10,272

*Source:* Survey of ISO 9000 certificates data provider: International Standards Organization (ISO) <http://www.iso.org/iso/survey2009.pdf>

The importance of ISO certification has swelled in Europe and the Far East to hundreds of thousands of companies. Even India, which is recognised as a country with fast-growing economy, has attained a respectable status in its effort to get into the global market by adhering to ISO standards. The question that stands out though is 'How many of these certifications belong to small businesses?'

The quality management standard, which first gained acceptance in the developed world, has certainly become an important aspect of doing business all over the globe. With globalisation of markets and liberalisation of local economies, large number of businesses is improving their performance and effectiveness. To maintain or enhance their competitive edge, these companies are focusing on their core competencies. They are also developing competitive strategies by emphasising quality as an important area of business. At the same time some of these business organisations are also involved in

the promotion of quality techniques to improve their bottom line. They are identifying activities in which they have a strategic advantage and are outsourcing other activities (Handfield and Nichols, 2002; Hong and Phitayawejwiwat, 2005). In production sharing, as articulated by Peter Drucker (Gaither and Naiman, 1978), a product may be produced using inputs of many countries. It may be designed and financed by one country. Many others countries, using raw material obtained from countries other than the one that designed and financed the product, may manufacture the components. The components may in turn be shipped for assembly to a plant in a country different from the countries so far involved. The finished product may then be shipped to a global market that may not even include as vendors, countries involved in the production sharing. Failure of keeping required standards at any stage may result in a product that is substandard in the eyes of the consumer. Maintenance of high quality standards throughout the chain is therefore essential. More and more companies therefore require their suppliers to obtain ISO certification.

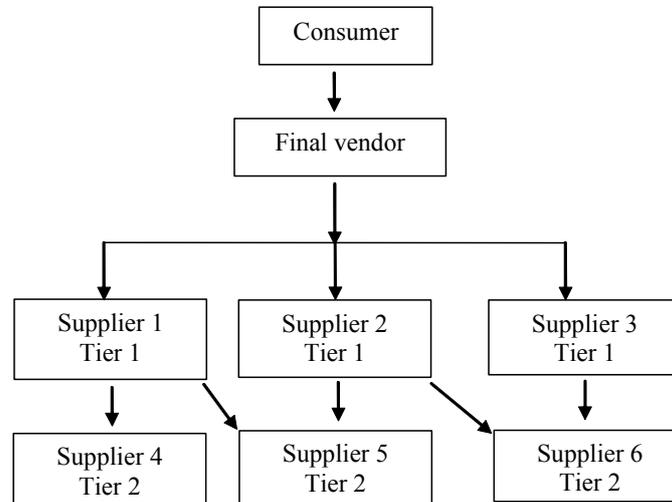
### **3 ISO 9000 and benefits derived**

We mentioned on passing the role ISO plays to ensure consumer quality expectation in the global market. Details of what role and how it plays the role is addressed in detail in this section.

The history of ISO 9000 dates back to Mil-Q-9858a, the first quality standard for military procurement established in 1959 by the USA (Sanders and Scott, 1997). During the 1970s, BSI published BS 9000 (the first UK standard for quality assurance) and BS 5179 (guidelines for quality assurance) norms. In 1979, it created BS 5750, a series of standards for use by manufacturing companies (Hakes, 1991; Corbett and Kirsch, 1998). They were enforced through assessments and audits. In 1988, ISO adopted the BS 5750 standard without changes and published it globally under the name ISO 9000. ISO 9000 was implemented by big companies in 1990's and then in mid-1990s, small- and mid-sized companies began to increasingly implement these standards.

Over the past one decade, the ISO 9000 standard has literally become an international benchmark in the field of quality management (Boiral and Jossey Roy, 2007). The process is buyer-triggered. A buyer at the highest level specifies quality requirements of the components to purchase to a supplier or suppliers. This supplier in turn specifies quality requirements to all of his suppliers. This practice continues all the way down to the suppliers at the lowest level as shown in Figure 1.

Since the promulgation of ISO in 1987, over 100 countries have adopted ISO 9000 as their national standard. The adoption of ISO 9000 by a country implies, in general, their pledging to adherence to three requirements. First, the country will see to it that organisations from the country that are planning to compete in the global market adhere to standards relating to vendor requirements. Second, the country will see to it that organisations document their processing activities in detail to indicate that their processing procedures are in line with the standard procedures outlined by ISO. Third, organisations will present their documentation to ISO authorised body for auditing of compliance with standard specification and subsequent certification and maintenance of documentation after certification. Thus, 'ISO standards require manufacturing and service organisations to document practices that impact the quality of the products and services'.

**Figure 1** Vendor-supplier relationship in ISO-scenario

We should emphasise though that ISO does not require actual inspection of products or services. It simply monitors adherence of manufacturing or service organisations to pre-specified standards believing that compliance with standard at all levels, as detailed in their documentation, results in quality product. “In fact, the primary goal of ISO 9000 Series is assuring customers that the products made by their suppliers – no matter where they are located – are manufactured under equivalent quality systems” (Davies, 1994). As implied in Figure 1, failure by any supplier to comply with established and documented procedures has a ripple effect on the quality of the final product.

ISO 9000 certification is both a commercial tool and an internal management system (Olivier and Marie-Josée, 2007). The ISO certification is now being viewed as a tool for staying competitive in the domestic and international market (Poksinska et al., 2002). Findings of Nikolaus and Walgenbach (2009) suggest that organisations are actually rewarded for complying with institutionalised expectations and implementing ISO 9000 standards. What is to be noticed is that ISO certification is by no means limited to setting standards on how products to be manufactured or services provided to meet requirement, but also how to safe use and disposal of these products and by-products to ensure safe and healthy environment. In a meeting of the United Nations framework on climate change in Bali, Indonesia on 14 December 2007, ISO Deputy Secretary-General Kevin McKinley stated that, “This Bali meeting has been especially useful to promote, particularly with key industry and non-governmental partners, the foundational role that ISO standards are playing in contributing to mitigating climate change and to achieving a truly sustainable world”. Although not directly related to ISO 14000, one of the contentious issues of discussion in drafting and finalising of the North American Free Trade Agreement (NAFTA) among Canada, Mexico and the USA in 1994 was the issue of environment. The proposal to require members to meet environmental standard put Mexico at a disadvantage due to the relatively limited resources it had to meet the environmental standards. Imagine then how difficult it would be for small and mid-sized businesses in underdeveloped or developing countries to meet ISO 14000 requirements of making the product or providing the service.

ISO 9000 standards enhance the companies' capability to develop and implement an effective quality system, with main focus on regular improvement and adaptation (Williams, 1997). Most organisations want ISO 9001 certification to qualify for a tender or to achieve preferred supplier status (BAB, 2009). Several studies have been conducted to analyse the benefits of ISO certifications. Benefits appear to be indirect and not directly quantifiable. In a study of a small sample of 48 firms, Rahman (2001) observed that Total Quality Management (TQM) approach based on Australia business excellence criteria had no significant difference in performance of businesses with or without ISO 9000. Corbett et al. (2002) concluded that the results are not conclusive. They look at companies in the following three sectors with the largest number of ISO 9000 certification: (a) chemicals; (b) industrial machinery and computers and (c) electronics and electrical equipment. They compared performances of companies that earned the certification with non-certified companies with similar performance before they started working on ISO certifications. They concluded that companies that received ISO 9000 certifications did not conclusively improve their return on assets. Benefits of certifications probably come indirectly. Singh et al. (2006) summarised benefits of ISO 9000 certification as clearer working procedures, better team spirit, reduced wastage, improved quality, better control of subcontractors, less customer complaints and better relations with customers.

Some of the earlier studies, however, had shown a clear benefit of ISO certifications. They have conveyed a clear cut message that the positive effects of ISO 9000 certification are related to managements' willingness to make this certification a genuine tool for improving quality practices (Poksinska et al., 2002; Llopis and Tari, 2003; Gotzamani et al., 2006; BAB, 2009)

An important study was conducted in Trinidad and Tabago by Lewis et al. (2005) to investigate the extent to which the criteria of TQM attained depends on implementation of the ISO 9001:2000 standards in Small and Medium Enterprises (SMEs). After using expert choice software package for data collected from senior practitioners from selected SMEs they determined that most important sub criteria and benefits of TQM in terms of ranking are: internal and external cooperation, improvement of process, improvement of products and services, self-assessment, performance measurement and quality related learning. Corbett et al. (2002), however, did observe that companies that did not earn certification generally experienced substantial deterioration in return on asset while companies that worked on certifications did not experience that deterioration. If one takes into consideration the fact that these industries were going through serious cost cutting because of fast developments in these industries, then saving on cost was a serious advantage. Other benefits are briefly discussed below to underscore the need to get ISO certification; as such certification is imperative for small businesses to compete in the global market.

### *3.1 Marketability of product or service*

ISO certification provides strong foundation for managing the quality of products or services. Quality that consumers perceive influences their satisfaction in a positive and significant way (Singh et al., 2010). In an important study Quin et al. (2009) found that there is direct and positive relationship between service quality, behavioural intentions and customer satisfaction. Even in fast food industry service quality is the core value to attract customers (Tsai et al., 2007). Similarly the study related to banking industry

conducted by Razak et al. (2007) also confirmed the linkages between service quality and customer satisfaction and between service quality and loyalty. Therefore, there is enough evidence to show that companies who have achieved various ISO certifications have experienced increased customer satisfaction and customer retention and reductions in operating costs. This provides a foundation and complementary approach to quality by focusing on process documentation and maintaining appropriate records. The standards lay the foundation for a total quality management programme by concentrating on three fundamental aspects: implementing quality controls, documenting the various processes and procedures and ensuring that the appropriate quality emphasis is established and followed by everyone in the organisation. Also, ISO certification immensely contributes in making the supply of products and services safer, efficient and environment friendly. These standards serve to safeguard consumers' interests by ensuring quality products and services meeting the international standards. This makes marketing of products and services easier and fair and ultimately benefits both the supplier and the consumer.

ISO certification has been so important that vendors are putting pressures on suppliers to achieve ISO certification. Consistent with this trend, "Many major U.S.-based multinational corporations such as the Big Three automakers, IBM, Xerox and Motorola are either stating a preference for ISO-registered suppliers or are applying ISO concepts to their supplier audits" (Davies, 1994). Due to lack of adequate resources, the pressure for certification is felt more by small businesses than by big- and medium-size businesses. Sub-Tronics of Stacy, Minn., manufacturer of transformers and magnetic devices, sought ISO certification and earned it because its vendor, 3M, demanded it.

### *3.2 Internal benefits*

In addition to achieving acceptability of their products and services in the global market, ISO-certified companies enjoy a number of internal benefits including cost reduction, quality assurance and developing work ethics and new skills. Some of these benefits are measurable while others are not. Small business can benefit from ISO certification as it standardises the way the businesses are run. This allows the organisations to write the processes, organise the documents and also streamline the basic functions.

### *3.3 Cost reduction*

Among the measurable benefits is cost reduction. A study of 620 ISO-certified companies show that the average cost of certification, which includes a one-time internal, external and registrar's cost ranges from \$62,300 to \$321,700 depending on the size of the company. However, the benefit resulting from certification is significant as is shown in Table 2. The corresponding savings for the costs of registration cited are \$25,000 and \$227,000, respectively. These are 39.7% and 70.7% of the one-time costs of registration. Thus, ISO licensed firms with sales of less than \$11 million can pay off the cost of certification in two and half years whereas firms with sales of \$200–\$500 million can pay it off in less than one and half years. A significant portion of the reduction in cost is associated with auditing. Conventionally, buyers select suppliers on the basis of quality of the product or service the supplier provides. They conduct quality audit, which may take days depending on the ISO series the vendor audits the firm. Many times buyers automatically waive auditing when they realise that the supplier is an ISO-registered.

Tom Blank, safety and health service unit leader at Monsanto says, “When Monsanto customers come to the plant to conduct quality audit, the ISO-9002 documentation slashes their auditing time. As soon as they’re aware that we’re ISO-registered, we’ve answered half the questions on their checklist” (Davies, 1994).

**Table 2** Cost vis-à-vis benefit of ISO registration (million dollars)

<i>Sales volume of companies</i>	<i>Average annual savings</i>	<i>Average annual cost</i>
Less than 11	25,000	63200
11–25	77,000	131,000
25–50	69,000	149,000
50–100	130,000	188,800
100–200	195,000	208,700
200–500	227,000	321,700

*Source:* Deloitte and Touche (1993); Inc. (1995)

The intangible benefits also include confidence and pride of employees for being members of a recognised company and goodwill of consumers toward the company resulting from its commitment to serve its clients with dedication. Speaking of the tangible benefits gained, Hayes writes, “Of some UK firms that qualified for ISO 9000, as surveyed by Pera International, 89 percent reported improvements in operational efficiency, 76 percent reported obtaining a marketing benefit, and 48 percent reported an improvement in profitability” (Hayes, 1994). All the benefits of ISO 9000 certification discussed above need to be weighed against the cost of designing, implementing and maintaining the system (Nwankwo et al., 2000).

### 3.4 *Quality assurance*

By adopting ISO standard, a company pledges to follow the guidelines set by ISO in manufacturing a product or providing service. It agrees to document every step of the process for assessment of compliance for certification by authorised registrar and for future auditing by prospective vendors. The step-by-step implementation and documentation of the process ensures quality of the product being manufactured or service provided at every stage of the process. Consistent with Armand Feignbaum’s concept of “quality at source”, when every member of the organisation does one’s job as is supposed to, penetration of error is curtailed resulting in quality assurance. Similarly, Shigeo Shingo’s concept of “source inspection” where the individual worker checks for errors that cause defects instead of checking for defect is consistent with the ISO approach to quality assurance. ISO, as stated at the outset, ensures quality by setting standards for member companies to adhere to at every stage of the process so that the error-causing factors are controlled.

### 3.5 *Work ethics and new skills*

Recording each of the procedures employed in the process of making a product or providing service is an arduous task. It demands conviction and subscription of each employee to the principle of providing consumers goods and services that they like and

to that end to go through the tedious step-by-step documentation of the process. In addition to ensuring quality, the documentation process reminds the employee of the subsequent audit to be conducted and the accountability that he bears for any deviation from the established standard consistent with the notion of quality at the source. "The more rigorous review schedule is a reminder to employees within these areas of the importance of improving their procedures step-by-step – a process in which we've found the repeated practice of change/improvement becomes habitual" (Joyner, 1996). Because of the step-by-step implementation of the process, companies have been able to easily identify their weaknesses and determine where and why they went wrong if they did. Braas Company president, Steve McIntick "involved the firm's 85 employees in the process to win ISO 9000 certification by making 20% employee bonuses contingent on the approval. The process helped to identify weak areas within the company and develop project management skills" (Inc., 1995). The benefit gained due to ISO certification is significant. However, as important as these gains are; small businesses are not getting their share of the benefit due to high cost of certification.

#### **4 Small businesses: journey towards quality**

As was mentioned in the preceding paragraphs, small businesses in the USA in collaboration with their corporate clients are significantly contributing to the nation's economy by getting into the global market with products and services meeting ISO standards. These small businesses along with micro ones are not only responsible for creating jobs but also assist in overall economic growth of the nations (Reijonen and Komppula, 2007). Recent developments in international commerce have indicated an interest in developing an international market more open and fair to competition mainly based on quality (Alsaleh, 2007). However, smaller businesses in large number, particularly in developing countries have to raise quality standards of their products or services to international level in order to advance into the global market thereby improving the economic status of their countries. Unfortunately, the journey to success via the implementation of ISO 9000 certification is an uphill battle due to limited resources and excessive cost of certification. As such, small businesses both in the industrialised and developing countries are unable to benefit from it as much as big businesses do. In a way, small businesses are in a dilemma of spending the limited finance they have to benefit from ISO certification and saving it for other operations. A study conducted by Manchester Business School indicates that ISO registered organisations in general feel that the effort to gain certification has been worthwhile. However, it is not clear how many of these were small organisations (Hewitt, 1997). But conclusion drawn from a research by Sun and Cheng (2002) is that there are some significant differences between SMEs and large firms in implanting ISO 9000 certification and TQM. These differences trigger discussions on practical implications for managers in SMEs and large firms. In a recent research study conducted by Monash University's Australian Supply Chain Management Research Unit, with support from JAS-ANZ, confirms that the ISO 9000 quality management system continues to have a positive impact on the performance of Australian organizations (JAS-ANZ Press Release, 2007).

#### *4.1 Quality and small businesses*

The benefit of incorporating quality in the production process has been long-established. According to Boulter and Bendell (2002), ISO 9000 certification is successful exercise for a large majority of SMEs. However, contrary to the common belief, benefits derived as a result meeting ISO or other standards for small businesses are not very evident. As stated earlier, in a study of a small sample of 48 firms, Rahman (2001) observed that TQM approach based on Australia Business Excellence criteria had no significant difference in performance of businesses with or without ISO 9000. Casadesus and Gimenez (2000) observed that 65% of Spanish companies which earned ISO 9000 certification had obtained very high levels of internal and external benefits. Furthermore, the benefits are not restricted to manufacturing sector alone. McAdam and Fulton (2002) state that even the software companies can benefit from effective quality management to improve their business processes. Another important study by Terziovski and Power (2007) found that moderately strong positive link exists between quality culture and the contribution of ISO 9000 certification to improved business performance. They also found this relationship to be stronger in SMEs certified for longer periods.

It is observed that unlike large businesses, small businesses had limited incentives and resources to move in that direction (Quazi and Padibjo, 1997). McAdam and Canning (2001) observe that most companies have not registered for certification and those who have done it, have done it for marketing reasons. As more and more large corporations out source some part of their business, they are asking their suppliers to maintain quality to gain ISO 9000 registration. For example, 83% of responding companies to a QSU survey stated that they are encouraging or considering encouraging their suppliers to seek ISO 9000 registration (Meyer, 1998). This may be an implicit benefit of subcontracting to small businesses. It is also observed, as is obvious, that addressing only one aspect of quality standard does not provide full benefits. However, the impact of training employees on process on how to attain reliability and to inventory reduction leads to 29% greater benefits (Yu, 2001). In the literature, it has also been observed that ISO 9000 certified companies obtained better indicators of business performance. It has also revealed that the certification could provide building blocks for successful implementation of TQM (Rahman, 2001).

Some have argued that because of inherent differences between small business and large businesses, a totally different strategy might be needed for small businesses (Yusof and Aspinwall, 2000) to quality assurance and subsequent ISO certification. It has also been observed that the quality system of many small businesses, which is based on intimate knowledge of customers, is not inferior to the ISO certification (McAdam and Canning, 2001). Several factors have been discussed in the literature as causes for non-participation by small businesses in the quality revolution. Primary factors among these are the lack of capital and technical know-how.

#### *4.2 Lack of capital*

ISO certification is time consuming and an expensive endeavour for small- and medium-sized businesses. Adoption of ISO 9000 for small businesses is costly (Raynor and Porter, 1991; McTeer and Dale, 1994; Brown et al., 1998; Bayati and Taghvi, 2007). ISO 9000 certification costs about €59,000 for small business and €70,000 for medium business (Bayati and Taghvi, 2007). The time it takes to complete registration, which is one of the factors that influence cost ranged from 12 months to 16 months (Brown et al., 1998).

Considering the benefit to be gained, however, companies that achieve certification welcome the accomplishment with great jubilation, as is expressed by LaChem Inc., of Pittsburgh. "After nine months of nose-to-the-grindstone work and more than \$50,000 in related expenditures, LaChem Inc. finally attained ISO 9000 certification.

#### *4.3 Technical know-how*

One important reason often linked to small business failure is poor managerial competencies (Gaskill et al., 1993; Perry, 2001). Small business managers, generally, have lower formal education levels. Furthermore, their participation in skill development and training activities is less (Billett, 2001; Bartram, 2005) Considering the low-level of education and/or orientation of employees to ISO documentation process, a significant portion of the cost of registration is used for training personnel to document the practice of implementation in accordance with the ISO 9000 specifications.

### **5 An option for small businesses**

Some researchers like Boulter and Bendell (2002) and Wilson (1996) have reported that in addition of lack of resources, small businesses are not awareness of the changes that have been made to suit the ISO 9000 standards to take advantage of. As cited by Curkovic and Pagell (1999) the biggest challenge of smaller organisations for implementing ISO certification seems to be the amount of paper work in this whole process. In view of the fact that small businesses have to benefit from ISO-certification, they have to find ways of achieving certification with the least cost possible. This can be done in-house using whatever little financial and human resource the business has. However, it is absolutely necessary that management be committed to implementation of an ISO 9000 quality system. Especially, recognising that it is a time consuming process management has to subscribe to and struggle to stay in course while leading employees through the process of: (a) a self-study; (b) documenting and implementing the production process control and (c) implement all the elements of the quality system.

The self-study stage involves understanding of where the company stands relative to requirements of the standards according to ISO 10011-1 guidelines. This is achieved by an internal audit initiated by the top-level manager or owner who conducts preliminary assessment of the needs for ISO certification, purpose of the audit and formal requests directed to the designated internal ISO 9000 representative to follow it through. The ISO 9000 representative "prepares audit plan that includes: purpose, objective and scope of the audit, reference standards, language of the audit, responsibility matrix, schedule of meetings, audit report distributions, and description of audit methods" (Karapetrovic et al., 1997). The top-level manager then assigns mid-level managers to review, modify and approve the audit plan and to assist the ISO 9000 representative in conducting the audit. The ISO representative then prepares working documents that include checklist, questionnaire, observation forms and other supporting documents.

The auditing starts with a meeting of the internal ISO 9000 representatives and the mid-level managerial team in order to clarify issues that need clarification and assess the availability of resource including personnel to implement the internal auditing effectively. If need be, training of personnel to enhance understanding of the internal audit should be raised and discussed in this meeting.

Quality loop flowcharts have to be developed to keep the ISO 9000 representatives focused only on activities that have impact on the quality of the product to be produced or service to be provided. Each entry is given a score ranging from 0 to 10 where 0 means that adherence to standard is 'non-existing' in the process, 5 means 'good but requires improvement' whereas 10 means that the 'process is in full conformance with the standard outlined in the ISO 9000 document'. Finally, the procedures relating to all of the activities including the meetings conducted in the initial internal audit are documented using standardised format for future reference.

In the documenting and implementing phase of 'do it yourself', work instructions for activities that have an impact on the quality of the product or service provided are 'identified, drafted and implemented'. Activities of relevance to the process are identified by posing questions as to how they can affect the quality of the product or service or what the effect of ignoring them would have on the quality of the product or service. This process is followed by procedure of writing the work instructions developed according to the procedure for writing the procedures.

## **6 Challenges for small businesses and governments of developing countries**

Although, ISO 9000 standards have proved very useful for vast majority of organisations all over globe, the perceptions of its usefulness have decreased over time (Casadesus and Karapetrovic, 2005). As is evident from Table 1, up to the end of December 2006, at least 897,866 ISO 9001:2000 certificates have been issued in 170 countries and this total represents an increase of more than 16% over 2005 with 161 countries. However, organisations in developing countries, especially those in the African continent, compared to other regions of the world have earned least ISO certifications (ISO Survey, 2007). In the past only biggest companies in the manufacturing industry, were registered to ISO 9000 but now more small to medium-sized companies in variety of industries are getting registered (Casadesus and Karapetrovic, 2005).

As observed above, companies that incorporate quality in their process, which either due to their decision to apply for ISO certification or for any other reason, gain advantage over their counterparts. ISO certification also helps in transfer of technology and good business practices to developing countries. Governments of developing countries, thus, face a serious challenge of introducing quality in the process of companies in their domain. This would have an impact both in making them competitive as compared to companies selling product in their region as well as for them to benefit from globalisation through increased exports.

The results of a study conducted by Sharma (2005) show that firms can benefit from ISO 9000 certification if they are genuinely interested in the quality philosophy by improving their internal business processes. Results also suggest that certified facilities of firms grow faster after certification and that operational improvements do not account for this growth (Terlaak and King, 2006). Similarly, large corporations would be able to benefit fully from ISO 9000 only when their suppliers also adapt to or make efforts in the direction of improving quality (Boys et al., 2004). As has been stated above (even though the sample was small), TQM with or without ISO 9000 has not made a significant difference. Mo and Chan (1997) on the other hand, state that small businesses face challenges on both cultural and technical fronts for ISO 9000 registration. One can easily

extend the case to small businesses in developing countries. Obviously, it would be beyond their reach to think about ISO 9000 certification, especially if the country has no programme. However, it may become within their reach if the national or local governments start making those businesses aware of the costs and benefits associated with quality improvements. A typical example of government commitment to ensure the ISO certification in developing country is the State of Eritrea. Fred-Hollow Intra-Ocular Laboratory of the intra-ocular lenses that designed to implant lenses carefully to cure cataract blindness was accorded ISO certification in 2000 – five years after its inception the institution was accorded ISO certification in 2005. Lenses made for \$20 were being sold for \$120 in the global market. The government is encouraging the fishery industry to follow suit in meeting ISO 14000 environmental standard and processing standard ISO 9000.

## 7 Conclusion

In today's global business environment SMEs in developing countries are now taking keen interest in using some quality standards in order to become efficient and competitive. They are now getting more concerned to develop better ways of ensuring that customers are satisfied with the quality of products and services. That is why large number of enterprises are now using ISO standards. SMEs could benefit from globalisation by either aligning themselves with existing multinational organisations, which have specified requirements or joining cooperatives with no requirements for entry, but in the process benefit in the acquisition and maintenance of quality. To be competitive the organisation would have to maintain quality regardless of their size and difficulties of the process in implementing ISO certification. Globalisation of trade and many other issues such as health, safety or environment protection, have greatly increased the relative importance of International standards as compared with national and regional ones (ISO Survey, 2007). Implementation of this process will result in greater competitiveness, growing market share and higher prices for exports of small business organisation from developing countries. This will ultimately lead to improved resistance to undesirable low quality imports or increased competitiveness for attracting investment and stimulating economic activity for facilitating the development and effectiveness of infrastructures, networks and investments.

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