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SME and quality performance in networking environment

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Abstract

In this study, a step-by-step management approach is developed in order to help small manufacturing enterprise to reach better quality level in term of quality management, quality assurance, quality control and continuous improvement process, despite their area of operation and level of expertise in quality matter. This research is justified by the fact that some large factories and other foreign business are continuously raising their quality requirement at all level. Therefore, one way to acquire expertise is to exchange knowledge and know-how in networking environment.

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1. Introduction

More and more large factories (LF) are moving toward the strategy of raising their quality level by eliminating non-quality cost and by lowering their fixed costs, keeping only variable cost. As one-way to achieve this, LF are raising quality requirement from their small manufacturing enterprise (SME) suppliers. Therefore, the idea of networking relationship between SME suppliers having a common principal is born (Abdul-Nour, Drolet, & Lambert, 1999). The advantage of this system is that SME are able to learn more by exchanging on real best practices instead of only having theoretical formation via consulting firm for example. At the same time, this makes them less vulnerable if the interpretation of quality requirements is misunderstood.

For SME to succeed in having the most in these networks, they have to be open, available, engaged and interested to develop a better quality system with their client and with the support of their team-mate. In order to do so and to face market globalisation, the success of any SME will depend on its ability to assure a good quality level and on the will of its management to do what is needed to at least meet customer expectation. Under such conditions, standardisation of good quality practices, management

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flexibility and continuous improvement philosophy become essential. The problem is that the SME lack the resources and the time to make the required cultural changes needed to gain the productivity and efficiency levels required to achieve a world-class manufacturer status (Abdul-Nour, Lambert, & Drolet, 1998; Abdul-Nour et al., 1999).

Networking approach can help companies in this regard. In this paper, we present a practical approach that can help SME and larger factory to create an intelligent network. This approach is based on applied research conducted over 2-years and a half-period; 17 SME and one LF were engaged in the networking experience. A step-by-step strategy is developed in order to help SME to evaluate their quality need and to develop an improvement program with respect to their investment capability (time and money) that can allow them to reach the quality level required to stay in the network. The objective is to implement basic quality component on a short time, implement and improve best practice in a progressive matter and bring a higher level of networking on a long term time period (Julien, Raymond, Jacob, & Abdul-Nour, 2003).

2. Methodology

The methodology used consisted of tow steps. The first step is to form numerous network of interested participant and to measure their individual and collective quality need. The second step is to develop a program in order to reach the quality level needed or choose an appropriate improvement project to work in a network condition. This project is based on the result of the first step. Reaching a higher quality level becomes the objective of the network (Julien et al., 2003).

2.1. Creation of networks and quality level assessment

This step is conducted based on an affinity identification survey and on quality need identification self-test. The survey consists of identifying who is suited to work with each other and the self-test is divided into four majors sections: quality management, quality assurance, quality control and continuous improvement process.

2.2. High quality level is the objective

The second step consists of developing an improvement program in order to reach the kind of quality level needed by the network. This is accomplished by choosing a common improvement opportunity identified in the self-test evaluation of quality need. The advantage of this methodology is that SME manager can adjust their investment of time and resources at what is effectively required in their own environment.

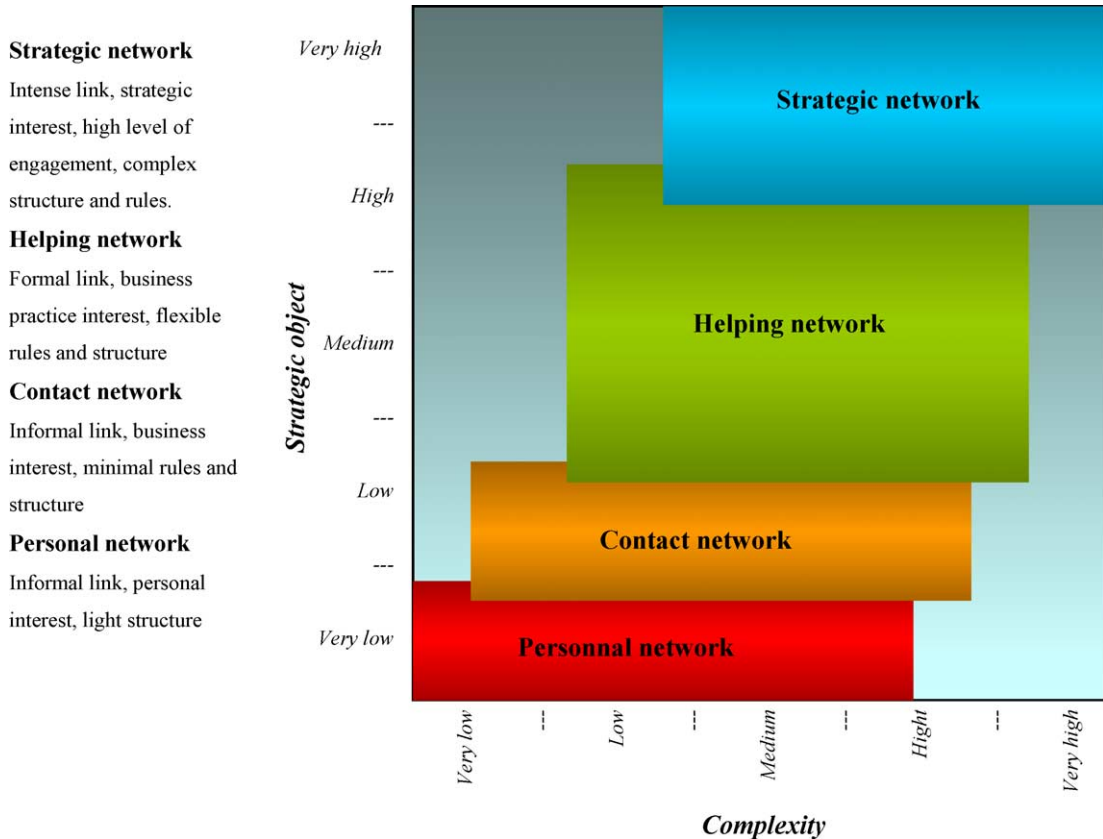
The program essentially consisted of three major activities, which are:

1. Seminar on quality matters;
2. Visit of manufacturing plants;
3. Discussion tables and exchanges of best practices.

In order to conduct the project in a proper fashion, the groups adopted a meeting strategy as indicated in Table 1. To eventually work together in a continuous amelioration project, one of the main activities

Table 1
Meeting strategy

1	Each meeting will be organised by a member of the network with the assistance of the co-ordinator of the networks. This will be done in turns as convenient to the member.
2	The hostess SME is responsible for the convocation notice and will act as the chairman of the meeting.
3	For each meeting, a secretary will be nominated in order to have a proper resume of the meeting.
4	A network meeting generally includes the following points: (1) Approval of the agenda. (2) Plant visit. (3) Discussion on quality matter. (4) Seminar and workshop (5) Individual work between meetings. (6) Choice of the next host and proposition of the agenda for the next meeting.
5	Once a year, one meeting is held with the large factory and one spokesperson from each network. The purpose of the meeting is to plan the activities and subject of discussion for the next year.



Source : “Comment réussir en réseau ?”

Fig. 1. Complexity level of different network (Collectif, 1999).

Table 2
Participation level of the networks members

Participation level	Network age		
	3 months	18 months	30 months
Excellent		9	6
Mitigé ou moyen	23	6	6
Pratiquement nul		2	3
Total of members	23	17	15

was to form the members of the network on quality matter. The principal seminars offered were Process Characterisation of The SME Activity, Quality via ISO-9000, QS-9000 and 6 Sigma, Quality Cost, Statistical and Management Quality Tools, Continuous Amelioration And Problems Resolving, Lean Manufacturing, etc. The plants' visits were mainly held to know more about the members of the network and to understand the environment, which he has to deal with. Finally, the Discussion Table was the best tool available to this type of network for learning on quality matter.

3. Group evolution

As decided by all members, the meeting were periodically held every 2 months or so. Even when each group was having a different evolution pace, the stages that they went through were essentially the same. As indicated in Fig. 1, in the first couple of months, the group were learning of each other and the individual were looking for their individual benefits. This stage is better known as the 'personal network'. Six to eight months later, most of the members were ready to go further. This is where the strategy for meeting took place and the seminars were periodically dispensed. It is during this stage that begins the SME plant visits, which greatly contributed to pass to the next stage called 'contact network'. Up to this date, none of the networks are at the last stage of networking, but all of the active members are at what we called the 'helping network'. In addition, it is important to underline that at each and every stage of the evolution, some members decided to end their implication (Table 2). Therefore, the last meeting was held in order to re-evaluate the purpose of the group and to choose an orientation for the following year.

4. Conclusion

For sure, working in networking condition has huge advantages for the order giver and the SMEs. In some instances, networking can contribute to resolving more rapidly and once for all a common problem, which does not appear at first to be global. It allows a major reduction of misinterpretation of standard and a higher level of standard practice, not to mention a better reaction to order giver and SME quality expectation.

The success of such approach depends on the seriousness of each member of the network in his or her willingness to become a World Class Manufacturer, and to achieve the level of quality needed in

order to be able to evolve in a quality network. Success requirements are: trust, long-term contact, management involvement, will, education, good partnership, etc. Most of the problems encountered were related to the lack of resources and will of some SME, lack of trust between partners at the beginning and differences in objectives priority at second and resistance to exchange knowledge and know-how.

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