

## CHAPTER 13

# MANUFACTURING IN ITALY: COMPETING IN A DIFFERENT WAY

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**M**ost of our examples of high performance manufacturing (HPM) have come from large plants that use repetitive production processes. Are HPM concepts equally relevant in smaller plants, or is HPM limited to large manufacturers? Will HPM practices apply in a lower volume, less repetitive context? What about the role of strong and ideological labor unions? Is cooperation between labor and management critical for the successful application of HPM principles? Italy presents an ideal case study of the extent to which HPM concepts are universal because some of the structural conditions under which HPM was initially developed are very different from those found within the Italian industrial system.

One of the main distinguishing features of Italian manufacturing is that it consists almost exclusively of small and medium enterprises (SMEs). Analysis of the applicability of the principles of HPM in Italy is particularly interesting, given that these principles were originally developed in the context of large manufacturing facilities. For example, upstream and downstream relations within the supply chain change markedly in SMEs, which have much less bargaining power than large firms. Because of the size of Italian plants, networks of plants are more important than they are in other countries. Thus, study of manufacturing in Italy cannot be restricted to one plant's experience but must necessarily involve the entire network of plants involved in the transformation process.

In addition to size, a further distinguishing feature of Italian plants is that their production is not highly repetitive. Many HPM practices were first developed within the automobile sector, where production systems are

highly repetitive. Such systems are typically characterized by many factors, including centralized and bureaucratic management, lower worker-skill levels, higher overhead, low levels of inventory, and low cost of goods sold. In Italy, however, manufacturing plants often produce only in small lots, which makes their systems closer to intermittent (batch) production. Such systems are likely to be characterized by a different set of factors, including decentralized management, higher worker-skill levels, lower overhead, higher levels of inventory, and higher cost of goods sold. Thus, it is interesting to analyze the degree to which the principles of HPM are able to permeate systems with different characteristics from those for which they were developed.

The third aspect that differentiates the Italian industrial system from manufacturing in other countries is that trade unions with a strongly ideological approach to labor questions have always played an important role within Italian plants. This is reflected in national politics and has permeated the entire country, with a high level of conflict in union-management relations that has only recently begun to be defused by political changes in Europe, especially those in Eastern Europe.

This chapter seeks to offer some answers to the following questions: To what extent can HPM be transferred to small and medium firms? Will the use of intermittent manufacturing and the presence of strong unions make the implementation of HPM more difficult? Which methods have been used and what solutions have been found by Italian SMEs when adapting and developing new technological and management practices to their unique characteristics?

## THE ROLE OF SMES IN THE ITALIAN MANUFACTURING CONTEXT

There are some important considerations that help in understanding the manufacturing context in Italy. These include the fundamental role played by small and medium plants in Italy and the level of internationalization of production in Italy.

Analysis of the top 5,000 Italian firms (in terms of sales) helps in identifying the main characteristics that distinguish Italian industry. First, there are very few large firms; only the top 40 percent or so have sales of more than 1,000 billion Lira (about \$50 million). Second, about 1,500 SMEs fall into the band of firms with sales of from 100 to 1,000 billion Lira (about \$50 million). Such firms are, effectively, the backbone of the Italian economy.

The Italian economy can best be understood if the Italian situation is compared with that of the most industrialized European countries. In 1992, Italy had the largest number of firms of any country in Europe. It had 3,250,000 firms, 21.1 percent of the entire nonagricultural private sector in the EU. Italy was also the country that had the smallest average-size firm (see Table 13.1). The total number of firms in Italy equals the number of firms in Spain, Austria, Greece, and Ireland combined. Italy, France, Germany, and the United Kingdom, among them, account for two-thirds of all manufacturing production in the EU.

The small firm, especially one that is still at an early stage of its cycle of development, is often still run by the entrepreneur-founder. Together with the family firm, the small firm is one of the basic social units in Italy, a country that places a high priority on individual and family values, often at the cost of social and collective values.

The reason why Italian SMEs rarely grow much bigger is the subject of a great deal of debate in Italy. Some argue that the small size of Italian firms is linked to limitations within the entrepreneurial and managerial culture of the country and that this limited development is due to limits that are inherent within the model of a firm that has been adopted. Others have highlighted structural reasons for nongrowth, such as market opportunities, the role of state participation, and the role of national financial markets.

All conditions being equal, the size of a firm is linked to the size of its "natural" market in terms of geography, history, and linguistics. The natural market in Italy is much smaller than that of nations with larger populations, such as the United States or Japan; or nations that have large areas of political and economic (ex-colonial) influence, such as the United Kingdom; or nations where the same language is spoken in other nearby countries, such as Germany. These factors all inevitably expand the "catchment" area of firms' markets.

Furthermore, until quite recently, state-owned firms were almost monopolists in several key sectors in Italy. These sectors consequently benefited greatly from economies of scale and were traditionally led by very large firms. Key sectors in which state ownership dominated included electricity and gas, iron and steel, telecommunications, petroleum, chemicals, railways, transport, infrastructure (roads, etc.), defense, heavy industry, and shipbuilding. In these sectors, as well as others, competition was limited, or even abolished, by law, to the advantage of the state-owned firms. Today, the situation is changing as the Italian state has begun a process of privatization in many of these sectors.

Table 13.1  
Gross Domestic Product (GDP) per Inhabitant and Size of Firm in the EU in 1992

	Italy	France	Germany	Spain	United Kingdom	Total EU
GDP per capita (ECU) Percent	16,469 104.5%	17,676 112.2%	17,080 108.4%	12,161 77.2%	15,448 98.1%	15,754 100%
Number of firms Percent	3,250,000 21.1%	1,960,000 12.7%	2,425,000 15.7%	2,170,000 14.1%	2,525,000 16.4%	15,425,000 100%
Average size (Employees per firm)	4	7	10	5	8	7

Source: Istituto Tagliacarne, 1993.

The Italian financial market is unusual. Very few firms are quoted on the stock market, where new capital for development is raised. In addition, the credit banking system has always tended to direct capital to certain specific sectors or areas of the country.

However, many Italian SMEs have traditionally been quite competitive. The factors on which the competitiveness of Italian SMEs is based include:

- The ability to develop the innovations demanded by the market.
- Flexibility and adaptability to market and environmental conditions.
- A strong sense of unity at the management level and close identification with the entrepreneurial and managerial aspects of the plant.
- Good possibilities for self-financing, due to a long-term tendency to reinvest profits in improvements.
- The ability to create a united atmosphere within the plant, often better than that found in large companies.

Particularly important are "design" abilities of Italian firms, including the ability to define a wide product range and the ability to customize products. A large number of small Italian plants have excelled in their ability to develop and implement innovations that have been well received by their customers and that have remained protected from potential new competitors by a sort of invisible barrier, due to the image that products made in Italy are often better than those from abroad.

However, some weak points have persisted in Italian manufacturing, including the lack of ability to bargain in the resource market (especially financial and technological), low propensity to form "critical masses" to confront institutions (through the setting up of trade associations) or markets (through joint ventures, associations, etc.), and the general inadequacy and inefficiency of public and private infrastructure (transport, roads, railways), all of which are elements that particularly affect smaller plants.

## THE INTERNATIONALIZATION OF ITALIAN INDUSTRY

Over the past 10 years, Italian industry has undergone a marked process of internationalization. As recently as the mid-1980s, Italian investment abroad was still very modest. Today, however, the total of Italian investment outside Italy matches the total of foreign investments within Italian industry. This recent international expansion has been led by small and medium

manufacturers. Over the past decade, more than 9,000 Italian firms have experimented with different forms of internationalization (see Table 13.2).

The current situation is the result of 10 years of important changes that encouraged the integration of Italian industry within world markets. Even though the amount of foreign investment in Italy is still slightly higher than the amount of Italian investment abroad, it is clear that Italian industry is undergoing a process of internationalization. Two main factors have contributed to this process: (1) the initiative of groups of medium-sized plants active in the traditionally competitive sectors of Italian industry and (2) the growing involvement of both small and medium plants in growth processes abroad.

The distinguishing feature of the Italian presence at the international level during the early 1990s was the vast increase in the number of Italian firms involved. This was due to the increased involvement of small and medium plants in the internationalization of the production process. Of the 622 Italian multinationals, 350 (56.3 percent) have less than 200 employees, and 478 (76.8 percent) have less than 500 employees.

## THE ADOPTION OF HIGH PERFORMANCE MANUFACTURING IN ITALY

The process of internationalization should be viewed within a context of much wider change in the competitive environment, where Italian plants have operated in a dynamic manner. The level and the type of performance required to be internationally competitive is rising constantly and affects all types of performance: costs, productivity, internal quality, quality vis à vis customers, time required to introduce new products, and delivery times.

**Table 13.2**  
**The Internationalization of Italian Industry in 1995**

	<i>Direct Italian Investment Abroad (A)</i>	<i>Direct Foreign Investment in Italy (B)</i>	<i>(B/A)</i>
Investors	622	966	1.58
Firms involved	1,842	1,630	0.88
Employees	595,547	527,461	0.89
Turnover (in thousand millions Lire)	156,841	212,175	1.35

Source: Cominotti, Mariotti, 1996.

For SMEs, their new competitive situation is mainly the result of three factors working simultaneously. First, globalization of the market has increased both the quantity and the quality of the plants against which Italian plants must compete. Customer needs and requirements have also tended to expand, corresponding to improvements in supply. Second, internationalization of the production chain has occurred, based on where the phases of the production cycles are located. This has occurred as firms have searched for both lower costs of production and certain skills required for each phase of the cycle. This has had the effect of raising the performance levels below which a plant will not be competitive on costs and quality. Third, HPM has led to important changes in the performance of Italian plants, allowing them to attain levels of excellence on several dimensions simultaneously.

Furthermore, it should be noted that Italy's traditional competitive factors of recent years have become less and less important. In particular, the economic unification of Europe and the introduction of a single European currency, the Euro, has rendered redundant the development policies based on export to countries with strong currencies (e.g., Italy to Germany). Thus, factors concerning inefficiency, rather than competitiveness, have come to light. Such factors would formerly have been masked by favorable currency exchange situations. These factors have forced Italian plants to set out along the path to renewal. Which paths have Italian plants chosen, especially those plants that compete in international markets? Which production policies and strategies have they chosen? Are Italian SMEs trying to implement HPM *tout court*, based on the overseas literature and practices? Or has there actually been an Italian HPM approach, with adapted practices?

We offer some answers, based on our comparison of the best practices of high performing plants in the Italian sample with those of the international sample. In the following sections, we will try to highlight the various aspects of adoption and adaptation of HPM practices as carried out by Italian plants. We will identify specific factors in order to be able to offer some generalizations regarding the applicability of HPM within the Italian manufacturing context.

### Best Practices: Comparison of High- and Low-Performing Plants

We studied two separate groups of Italian plants, the high and the low performers, identified on the basis of their performance. The ways in which the two groups adopted innovative practices was analyzed by differences in

production processes and production technology, management of production flows, quality management, information systems, human resources, and organization and production strategies. The two groups exhibited statistically different behavior in many of the specific areas analyzed. There were significant differences between the two groups in 83 percent of the practices.

The practices where the differences between high-performing and low-performing plants were most marked are shown in Figure 13.1. There is a marked difference between the two groups in all areas of operations. This confirms the innovative nature of HPM and the impact of these new approaches on performance. HPM is not characterized by the use of unique and exclusive technologies, but rather by the level of integration and the coherence of *all* management and organizational innovations that affect and alter the traditional principles of both organization and management.

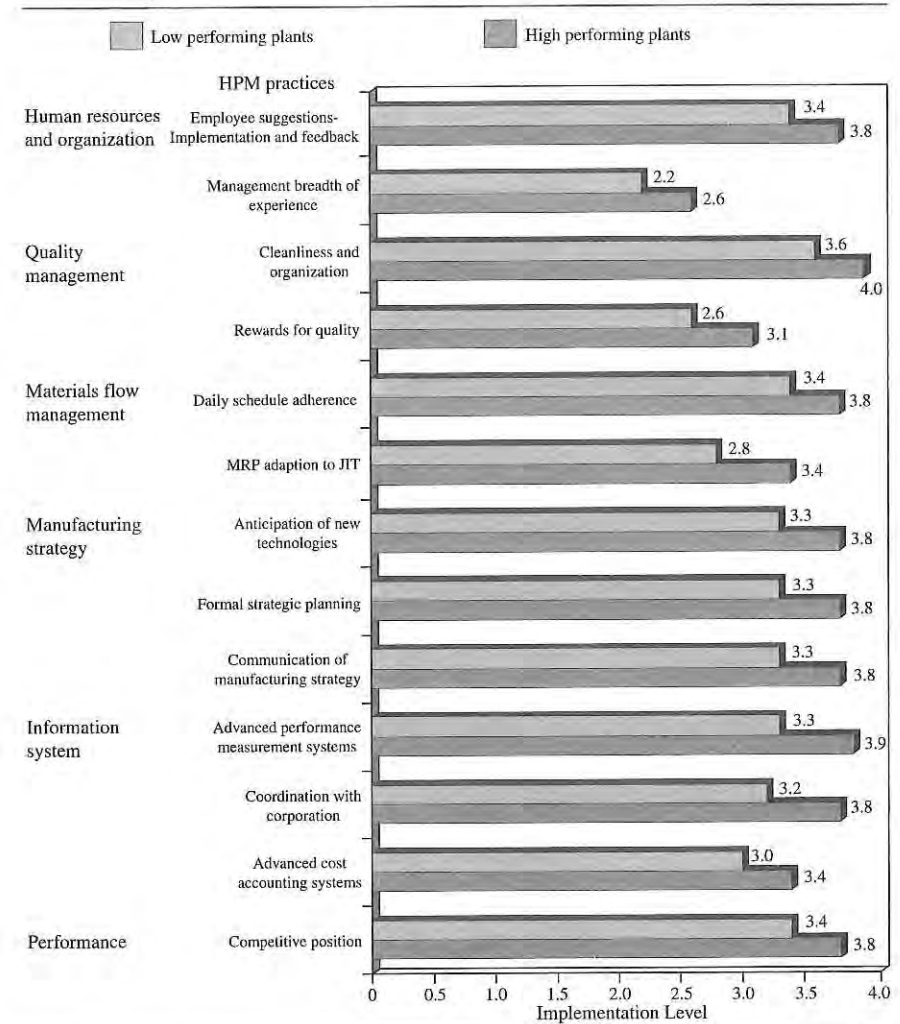
### Best Practices: An Intercountry Comparison

Comparison of Italian plants with those of the other countries involved in this research revealed considerable differences in the way in which high performance practices are applied. Figures 13.2 and 13.3 show the practices adopted in Italian plants that differentiate these plants from those in other countries. Figure 13.2 shows the differences for the high-performing plants and Figure 13.3 shows them for the low-performing ones.

For the high-performing plants, 40 percent of the variables considered showed a significant difference when Italian plants were compared with plants from other countries. The variables that concerned relations with customers (see Figure 13.2) were, on average, better in the high-performing Italian plants than those in high-performing plants in other countries. Customer satisfaction, involvement in quality, and information concerning products received by customers are the variables that differ most markedly in favor of the high-performing Italian plants. This highlights a basic strength of Italian plants, something that emerged during our visits to plants and from discussions with various managers. Italian plants have the ability to respond to market demands to be flexible and to customize products. The product is considered to be the fundamental point of contact between the plant and its customer; thus, a great deal of attention is paid to it and to the plant's ability to customize and to personalize what is produced.

This comparison also revealed the importance that Italian plants place on employment stability. In all plants (both high and low performers) the workforce was more stable than in the other countries studied. This is a

Figure 13.1  
Comparison between High- and Low-Performing Plants in Italy



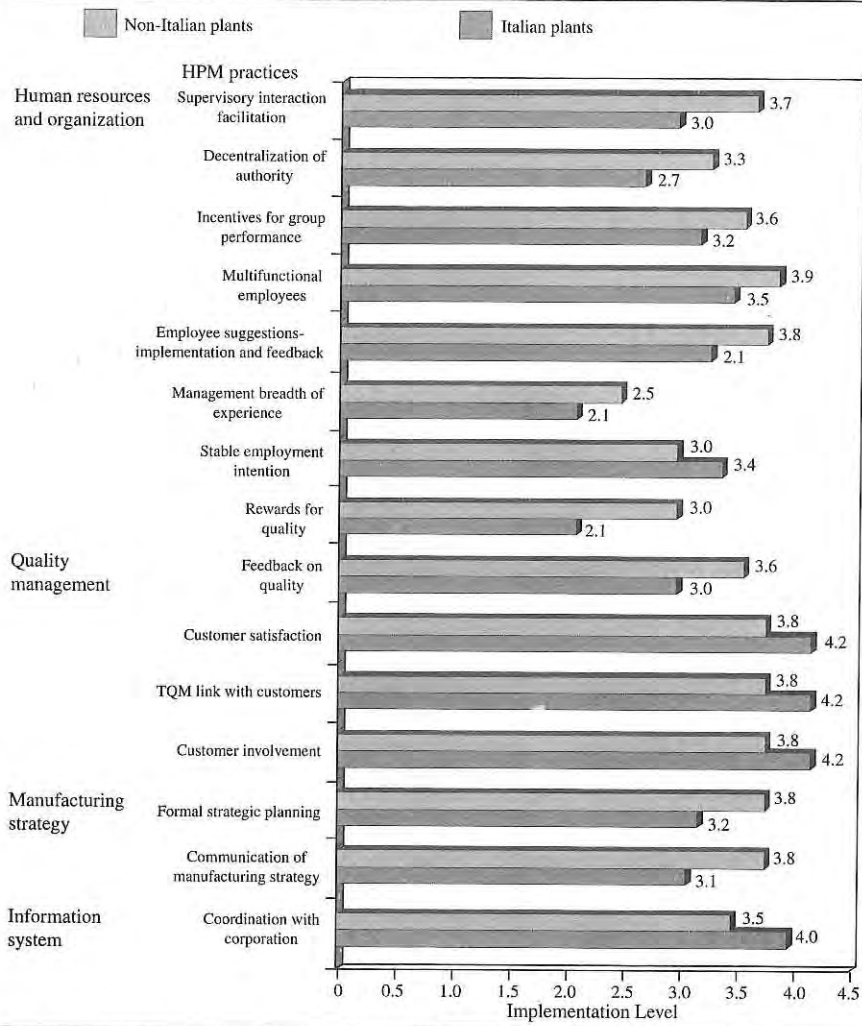
Source: HPM data.

result as much of the laws and norms that protect employees in Italy as of a conscious policy choice on the part of the plants themselves.

Quality management is viewed differently in Italy than in Japan or the United States. Italian plants envisage the idea of quality management as the search for customer satisfaction and customer involvement in the quality of

Figure 13.2

Comparison between High-Performing Italian Plants and High-Performing Non-Italian Plants

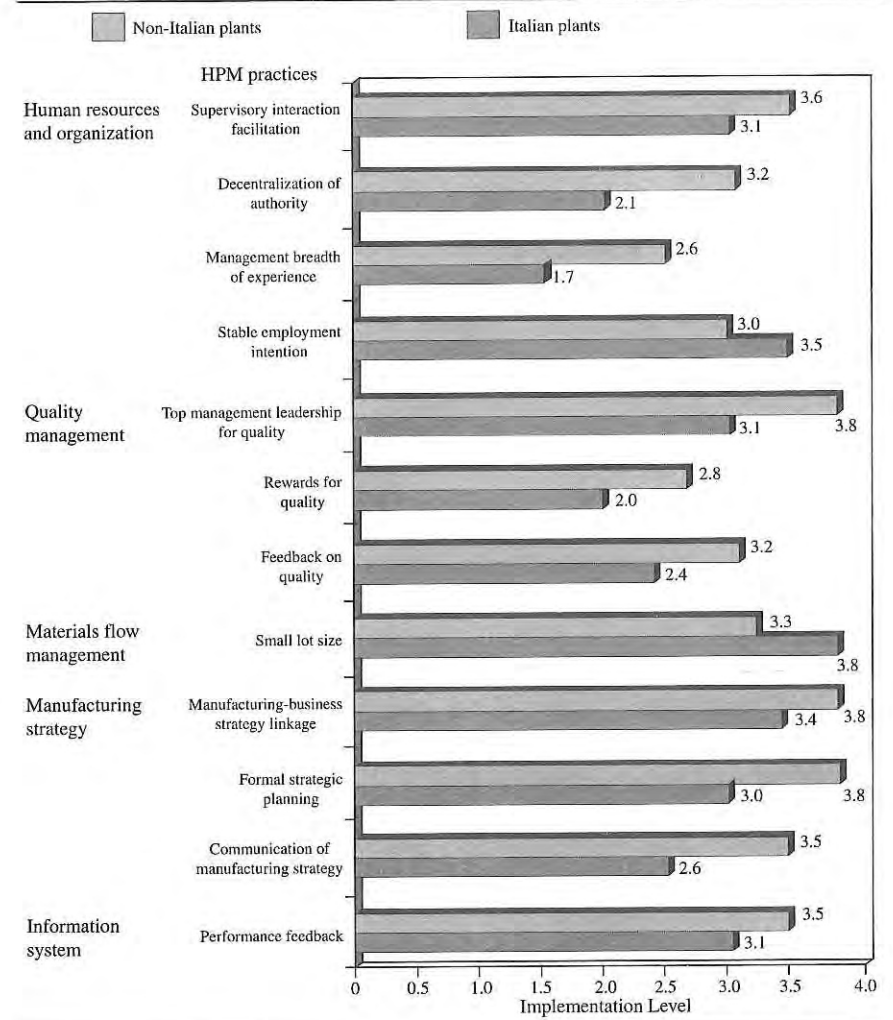


Source: HPM data.

products. Other methods, such as using work groups and giving greater responsibility for their work to the employees themselves, have not been used very much as tactics for increasing employee involvement for continuous improvement. Thus, Italian plants typically do not adopt all the various quality management approaches as they would if they were to follow

Figure 13.3

Comparison between Low-Performing Italian Plants and Low-Performing Non-Italian Plants



Source: HPM data.

the “total approach to quality” inherent in the concepts of HPM. However, it should be stressed that in recent years many Italian plants have begun to make considerable efforts to adopt more comprehensive quality systems, such as ISO 9000, and, more generally, to adopt a *total* quality management (TQM) approach.

Italian plants lag farthest behind in the area of management. There is a lack of training for management in the skills required for HPM. This problem is both illustrated and accentuated by the fact that traditional entrepreneurial styles of management still prevail in Italy. Few Italian plants periodically reformulate their plans for long-term strategy, nor do they communicate their strategy to personnel at other levels within the plant.

## THE ITALIAN PATH TO HIGH PERFORMANCE MANUFACTURING

The path taken by the Italian high performers is thus somewhat different than the path followed by high-volume plants with mass production. Italian plants have not introduced flexibility starting from repetitive production; rather, they have sought to achieve efficiency, starting from highly intermittent batch production, by maintaining or developing their capacity to make highly customized products, further opening up markets and customers. The challenge for Italian plants today is in knowing how to improve efficiency, delivery times, and quality without penalizing their flexibility of response to the market.

Study of the experiences of the Italian plants that have started to introduce HPM approaches has made it possible to identify some salient points regarding the process. In terms of the goal of improving efficiency levels and linking them with high flexibility, Italian plants have tended to choose those paths that make personalized response to the market possible. Italian high performers have not emphasized adoption of a complete HPM model, intrinsically complete and structured. Rather, they have adopted concepts, techniques, and practices that will serve to guarantee personalization (customization) of the product as a flexible response to the market and gradual approaches to organizational change, proceeding by accumulation rather than by "jumps." Thus, the objectives most commonly adopted by innovative Italian plants are:

- Coordination and integration among the supply, design, industrialization, production, and distribution phases.
- Actions to improve the quality of products and services for customers.
- The will to change and innovate the attitudes and the policies of human resources.

The internal (plants') and external (context) variables that seem to influence positively or negatively the adoption of best practices in small and medium plants are listed in Table 13.3.

The picture that emerges from our discussions with managers studied is that of a culture of young, dynamic plants, with a high propensity to exploit situations of competitive advantage from time to time, rather than to develop elaborate long-term market strategies. Product innovation is a fundamental competitive factor, but it is often not linked to marketing activities and is not planned in the medium term.

### Importance of Performance for Italian SME High Performers

The types of performance that successful Italian SMEs see as being most crucial involve their ability to satisfy customer requirements in a personalized

**Table 13.3**  
**Opportunities and Potential Problems for Italian SMEs Wishing to Introduce High Performance Manufacturing Practices**

	<i>Opportunities</i>	<i>Potential Problems</i>
Firm variables	<p>Good ability to perceive and respond quickly to customer requirements.</p> <p>Low level of conflict in SMEs</p>	<p>Broad-range and low-unit volumes, difficulty of medium- and long-term planning.</p> <p>Lack of experience in competing in highly globalized markets (often niche markets prevail).</p> <p>Scarcity of managerial skills (mainly linked to the size of the firm).</p> <p>Lack of know-how about managerial aspects (e.g., modeling and formalizing) and on technical-specific aspects (e.g., marketing, design techniques).</p>
Variables in each context	<p>General willingness to change typical of an industrial context characterized by new, young SMEs operating throughout the country.</p>	<p>Rigidity of the norms that regulate the labor market.</p> <p>Low level of bargaining power when dealing with suppliers and customers.</p>

manner, at lower costs and with the desired level of quality, in terms of innovation and customization of products, product costs and services offered to customers.

- *Time.* Time is considered to be a critical performance variable, even though Italian plants do not typically make large investments explicitly designed to improve the speed of response to the market, delivery times, and the ability to reduce the effects of market variations.

- *Quality.* *Consistent* quality is seen as being very important by Italian plants. All too often, however, Italian plants pursue quality solely through ISO 9000 certification, which is perceived more as an end in itself than as part of a continuous process of improvement. Some plants view quality as a cost that could lead to greater rigidity. Nevertheless, they do perceive the aims of quality in a positive light, a goal that means not only the lack of defects but also increased satisfaction of customers' requirements.

- *Costs.* In the past, cost was not considered to be a particularly important variable in Italy because the lira has always tended to devalue against other currencies. Thus, plants did not need to become cost sensitive. With the advent of the Euro and a stable exchange rate, costs and efficiency have become much more important to Italian plants. Cost control is, however, a problem that has yet to be taken up in a serious manner, and costs do not always play a large enough part in decisions made by Italian plants.

### Importance of Best Practices by Italian SME High Performers

- *Product Standardization.* This is still an underused concept in the design phase in Italian plants, most likely a consequence of the type of plant we are studying (wide range of products and low-unit volumes). In particular, there appears to be little use of either "design for manufacturing" techniques or of standardization of models and methodologies in Italian plants. There is, however, a tendency to standardize components. There is also a tendency to move personalization of products farther and farther downstream and to set up multifunctional design groups.

- *Total Quality.* Italian plants are very sensitive on this issue and are willing to invest in it. However, it should be stressed that, in reality, only specific techniques drawn from TQM practices tend to be adopted and applied, rather than a more global and complete approach to total quality.

- *Production Processes.* There have been many initiatives made in terms of process improvement in Italian plants, among which are focusing of processes (specialization and externalization of phases) and improvements in process technologies that aim to improve efficiency, to reduce throughput times, and to increase the flexibility of the product mix through rationalization of layout, the use of proprietary equipment, and reductions in tooling time.

- *Just-in-Time.* JIT is rarely used in Italy. Indeed, in intermittent production (typical of SMEs with many products), flow time cannot be reduced beyond a certain limit. Furthermore, the supply network of small and medium plants has specific characteristics that make the use of JIT techniques both difficult and not really worthwhile.

- *Information Systems.* Information systems are widely used in Italy and often have tailor-made solutions for design and production planning. They are less commonly used within the production process and for statistical checks on processes.

- *Human Resources.* Flexibility of labor is a strong point in Italy. It is essential for flexibility, especially volume flexibility. The plant's own culture and that of its employees (willingness to change) offer an ideal opportunity for the introduction of specific HPM practices.

Reduction in the number of levels in a plant's hierarchy and the cutting back of organizational structures has not been a major initiative in Italy—the staffs of small and medium plants have always been "lean." A lean management structure reinforces direct dialogue with employees and favors greater responsibility and multifunctionality of those who work in the plant. If there is no plan for coherent organization or for decentralization of the decision-making process, there may be evolution "at the top," which encourages a paternalistic or family style of management. This tends to strangle innovative concepts with traditional management limiting the possibility that they will have a positive effect.

Many plants see the professional and cultural growth of human resources as a strategic objective. But Italian SMEs often find it difficult to carry out efficacious human resource development policies because they lack the adequate structures and skills required (e.g., support for developing incentive systems for personnel, structures for carrying out training, development programs aimed at meeting specific needs, etc.).

- *Suppliers.* The Italian supply system is made up of two distinct types of suppliers: (1) prime suppliers, which have a good bargaining position, and



(2) small scale suppliers, or artisans, with low bargaining power and high levels of flexibility.

Supply-chain management approaches typically seek to ensure reliability, punctuality, and quick response times to variations in quantity and mix on the part of the suppliers. The most widespread interventions in Italy concern helping small suppliers to grow and identifying the first level of suppliers. Trends within the supplier management process include adopting systems for evaluating and selecting suppliers and setting up medium-to long-term relationships with them. Some HPM practices are not adopted because they are either not feasible or not practical. There may be a strong comakership relation with first-level suppliers and JIT within the supply function, that is, frequent deliveries of small lots and large reductions in the number of suppliers. On the other hand, some SMEs that supply large-scale high-performing plants do take part in more HPM initiatives.

- *Customers.* Downstream production relationships are considered to be very important, if not decisive, in Italy. Italian SMEs pay a great deal of attention to customer satisfaction, to customer involvement in defining quality, and to using information gathered from customers in order to improve product quality. The most widely used HPM techniques by Italian manufacturers are increased in-depth knowledge of customer requirements, shortening distribution channels, adoption of dedicated information systems, and developing and increasing the skills of personnel.

### Human Resources and Industrial Relations

In terms of human resource management, we learned several interesting things during our discussions with Italian managers and entrepreneurs, which serve to outline the objectives that the high-performing Italian plants are trying to achieve. The cultural growth of a management culture is a necessary but not a sufficient condition. "The new" must also be passed on, which must necessarily involve the entire organizational system. Individual skills must be transferred and translated into procedures, behavior, and style of management. Greater responsibility of personnel, participation, and multi-functionality all require a change in the way that the organization of work is viewed and in the systems through which work is assigned and rewarded.

Work groups set up in order to improve quality, efficiency, and service offer a valid tool for solving many production and management problems. However, work groups should be set up using suitable approaches. The cultural and professional growth of employees should be sought

continuously. There must be improvement in the quality of industrial relations. Lack of knowledge regarding high performance production can lead to adverse reactions from trade unions and could potentially block the development process.

One of the most important developments that has taken place recently in Italy has been the launch of a process of developing responsibility in employees. This has affected all levels of personnel, from the top to the bottom. This "revolution" in the employee's role implies that there has been a rethinking of the role of the supervisors and of the role of the trade unions. Even though this is never a simple process, SMEs do have some advantages over large plants in this regard. There are already far fewer levels in the hierarchy, and workers are less likely to be strongly unionized. Where it has been tried, the process of expanding the role of all employees has been met with an excellent response, which serves to demonstrate how human resources are as yet untapped in many Italian SMEs.

The experience of on-the-job training by expert colleagues, learning through training courses on product and process technologies, setting up work groups with collective rewards, and delegating have all shown how knowledge can be copied and reproduced within a plant. This has had a marked impact on the level of involvement, willingness to participate in problem solving, and obtaining small but cumulative results, which are part of the philosophy of continuous improvement.

A number of Italian plants are also experimenting with incentive schemes, such as rewards for all workers linked to the gross operating margin of the plant. These experiences not only act as an incentive for productivity, but also have shown how they help orient workers in the direction of the plant's aims and objectives. Overall, the Italian unions' response to such changes has been positive; and plants, which historically were always a place of division of labor, are being transformed to focus on personal and professional growth. In those plants where initial diffidence has been overcome, the unions are now actively participating in the reorganization of production methods and in formulating contracts for "rewards for results." Within this phase of development of industrial relations, a new "bottom up" approach has been tried, rather than the more usual "top down" approaches. The most successful initiatives have almost always been initiated by plants and local workers' representatives, rather than by employers' associations or the national committees of trade unions.

## SOME MANAGERIAL IMPLICATIONS OF THE HPM APPROACH IN ITALY

Several points have emerged from the meetings and discussions we held with managers of the Italian plants studied regarding the application of HPM in Italy. HPM models are based on a new philosophy; thus at least four major changes must be carried out in the way in which an organization is structured:

1. Changes in "internal" relations (involvement of workers)
2. Changes in "external" relations (with customers and suppliers)
3. Changes in flow management (production flows become leaner, sources of interruptions and variations are eliminated, etc.)
4. Changes in the search for total quality within the plant

HPM requires a long-term effort that may last for years, one that entails both small and large interventions in all areas of the plant, not only in the area of production. In Italy, many often radical adaptations and changes have had to be made to HPM in order to take the specific nature of Italian plants into account. Some practices, for example, those involving suppliers or flow management, cannot be "slavishly" transferred to the Italian SMEs.

There are two main obstacles to implementing HPM in Italy: (1) Low product-unit volumes are exacerbated by insufficient standardization during the design of components, products, methods, and concepts. (2) There is a lack of appropriate skills required for the new methods, a problem that is accentuated by the traditional style of management of Italian plants. However, the concepts and the methods HPM is based on are valid and can be adapted because they are oriented toward a mix of excellent performance that SMEs may already be able to achieve; they render many improvement interventions that SMEs are already involved in synergistic, and they help integrate them into an overall, coherent logic.

The passage from the logic of adapting individual techniques and methods to an HPM strategy, where both internal and external relations change radically, requires a change in the plant's perspective. Plants must move from single interventions, often with short-term aims, to integrated medium-term policies. This is the most difficult, but also the most promising, change necessary. In order to control costs, advanced systems of measuring performance and tools for evaluating the overall return on investment in technological-organizational innovations are required. The quality of the product or

service should not stop at the standards set by ISO 9000 certification but must be interpreted as the result of a continuous process of improvement toward meeting the customers' requirements.

Product innovation is still a winner in Italy, but it must be more closely linked to marketing strategies and to technological innovation. Knowing one's own customers well is not the same as knowing the market well: both the knowledge and the professionalism of Italian management must be developed in the areas of marketing and strategic planning.

Personalization of products is already well developed in Italy. It must be matched by design efforts (modularization, standardization, etc.), so as not to increase the internal variety of products, which is one of the main sources of increased costs. In addition to standardization of parts and product modularization, a higher level of standardization of production processes is also considered to be an important goal. It should start from a careful analysis of the reasons behind any obstacles, such as management's lack of know-how or the development of suitable and inexpensive technologies.

Single sourcing for each part number is not a viable alternative for SMEs for a variety of reasons, mainly related to the need for flexibility of volume. However, it can be used as an underlying principle: that of setting up long-term relations with a small number of suppliers. New approaches to designing products can make it possible to increase the volumes of each part number bought, thus increasing the plant's bargaining power in relation to its more important, or first-level, suppliers and allowing smaller suppliers the opportunity to grow. Management and growth of a network of small suppliers, which guarantee lower costs and good service, is seen as being important. However, equally important is the idea of rationalization of supply chain relationships (first level of suppliers, evaluation/selection systems, and a tendency to develop medium- to long-term relationships). Many other support methods should also be strengthened in Italian plants, in particular, information systems for programming production and process control and for managing a plant's upstream (suppliers) and downstream (customers) flows.

In the final analysis, we could conclude that in their march toward the innovation and adoption of high performance models, Italian SMEs intend to maintain their flexibility of response to the market at a high level, in terms of offering a wide range of products and customization of products, with the aim of reducing costs. They believe in the uniqueness of Italian entrepreneurship and are willing to gradually change and adapt others' models (both of product and of process) only if they are not in conflict with the

plant's current strategies. Italian plants seek to constantly improve their relations with customers. They tend to integrate operating phases, upstream and downstream, utilizing the abilities and the specialization of other plants within a network logic.

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