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**Sweden's International Development:
Driving Forces and Present Structure**

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Sweden's international development: driving forces and present structure

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by Gunnar Eliasson, *Industriens Utredningsinstitut (IUI)*

If the problems of industrial competitiveness have remained unchanged over time, the same cannot be said for the realities behind them. The international competitive position of Swedish industry has been examined many times in political discussion and in the texts of Royal commissions. Productivity has been too low or costs too high. This is an indirect way of saying that profitability is too low and that firms will go bankrupt if something is not done.

The question is who is to do something? If costs are too high, government and unions are thought to be responsible. If productivity is too low, the workers can be blamed. If profitability is unsatisfactory, management is responsible.

However, there have always been crisis industries. Currently, basic industries are in trouble. The really bad firms close down, and the rest of the industry recovers. The Swedish steel industry, for instance, has been in crisis on and off over the last three or four hundred years, but has always returned in better health, although in a new shape.

In 1768, when Westerman in the first "long-term survey" of Swedish industry, complained about the slow work process in Swedish industries compared to that of foreign business, he was only the first to print it. The same story has been printed many times since then.

Not even one of the main themes of this chapter – the large manufacturing firm as an international marketing organization – is new. Many Swedish firms began to expand their international subsidiary organizations as early as the turn of the century and have continued since then. The "new understanding" is that the international organization of large and small, old and new firms was a key factor behind the successful transformation of Swedish manufacturing industries from a pre- to a post-oil crisis organization by the early 1980's. Basic industries were still based in a technology oriented towards cost-efficient factory production of relatively simple products, and had not developed an international marketing network of their own. Engineering industries had. Swedish firms in general were more internationalized and more professional in global marketing than their European competitors, and hence, seem to have recovered and restructured faster after the economically troubled 1970's.

The problem is that few have bothered to take a close look at what goes on *within* the business organization called a firm. It has always been thought of as a factory with large smokestacks that manufactures goods. This has long been a crude simplification but, for the modern firm of today, it is simply wrong.

This section begins by discussing the technologies and economic forces that explain the emergence of the modern industrial firm, and, in particular, how it has organized itself to cope with change. It continues to describe its internationalization and the tendencies of producers to work closely together with customers, thus eliminating some typical market functions. It illustrates the modern firm as a knowledge-based information processor, as a dominant service producer and as a rapidly growing financial institution.

The section concludes by analyzing the management technologies necessary to run such complex entities, and to transform their internal structures to cope with new types of competitive pressure. How is the innovative function organized within a largely process-oriented business organization? Was the restructuring of the large Swedish firms into gigantic, international marketing organizations the result of deliberate, strategic decisions, or did this change simply come about? Has direct foreign investment been a method of surmounting trade barriers, a vehicle for achieving economies of scale, a way of minimizing production costs or a technique of capturing global markets? Above all, how did a small and sparsely populated industrial nation at the northern end of the globe develop one of the world's most differentiated and sophisticated industrial knowledge bases?

The knowledge base is the key endowment

The notion that a business firm develops through additions of "machine capital" and "man-hours" came about as economic doctrine in the 19th century, and has been imbedded in the minds of economic theorists and commentators since then. Without a solid base of industrial knowledge, no production growth will come out of more machines and more man-hours. (The reverse is of course also true but not nearly to the same extent. In today's service-oriented manufacturing, large production values can be generated by unique knowledge, a small input of man-hours and no machines. Hardware production does not have to take place in the same firm, or in the same country. The main argument is that the leverage from knowledge to machine and labor productivity is large, and is what matters.)

The knowledge base of a business organization, and its competence to survive, are embodied in its people – at headquarters and at subsidiaries – and in its internal incentive system. Quite unlike the case of a ship, equipment means very little when the corporate seas are rough. Few would object to this conclusion; it is almost trivially true. The problem is how the industrial knowledge base is to be built. The natural answers from members of today's welfare society are that more schooling is needed. This is almost certainly wrong. Industrial knowledge is not created in schools. *The major knowledge input in the modern industrial firm seems to have been created on the job.* The general education provided by the schooling system is supplementary not decisive.

The problem is that the most important knowledge on which large business organizations – or any complex organization – are run, cannot be described and communicated, and hence is impossible to be

taught in school. Marshall (1919) was, of course, very right when he emphasized "managerial knowledge" as a third and important factor of production, but he did not have much of an inkling of what it was composed – and neither do we now.

We know quite well that skilled workers – on whom manufacturing process efficiency has been based during the post-war period – cannot be efficiently taught at school. The code is too complex and has to be broken by thorough on-the-job training. Most engineering workshops are too complex to allow the knowledge base to be centralized and automated. Hence, the distinction between information (the code) that can be communicated and taught in an abstract manner, and the knowledge that has to be added to achieve output, is very relevant. This *teaching, or knowledge investment problem, becomes critical* when we reach the higher level of complexity associated with managing large business corporations and their subsidiaries.

As a rule, on-the-job training or learning is achieved by higher level managers through varied careers. In some countries, this takes place as part of the career, by managers moving between firms in order to increase their salary. This is typical of the Swedish market for managers. In some very large firms, notably large US companies, career programs have developed as part of the corporate tradition and culture. People are selected for that career as they exhibit the desired qualities and are moved, or pushed, within the company to achieve the varied and general management competence for high level positions.

During the last few years, a general awareness of the considerable returns on such career investments, not only for the individuals involved, but also for the corporation as a whole, has started an "academic" discourse on how such career training programs should be most efficiently organized within firms. Such discourses, however, immediately run into the difficulties of defining the output of the educational process. What should be taught? And what kind of teachers are needed? People in academia rarely possess the necessary experience and hence have little to say on this subject, and the career people are normally not aware of their knowledge in such an explicit fashion that they can pass it on in a classroom context.

What we have found is that intensive experimentation is more important than the prior setting of routines and rules that may even appear efficient. For instance, we can say rather categorically that *regulation of job openings in large international corporations, based on nationality rather than perceived competence, is probably very harmful to the overall productivity.*

In many ways, it is very rewarding to take a closer look at the emerging modern manufacturing firm, so well represented in Sweden. One finds very little of the hard manual labor commonly associated with factory production in literature, and what does remain is rapidly disappearing. One finds that what matters for superior business performance are the human beings and their knowledge. Firms with arms and feet in practically all nations of the globe, the multinationals, are knitting national economies more closely together, to the distress of a few political bodies, but to the benefit of almost everyone. And those firms that have been best in organizing the right teams of people are also the most successful performers.

Foreign marketing organizations

The first mistake we make is to talk about Swedish industry. *Swedish manufacturing firms*, in fact, *operate at least 1700 production and/or marketing subsidiaries abroad* (in 1978). On average, *more than 30 percent of their total labor force works outside Swedish borders*. If we take the 20 largest firms, more than half of their activities are located abroad. They are owned predominantly by Swedes, and run mostly from Sweden. But they operate on an internationally available technology base that only the unique competence residing within the organization can transform into a money-making activity. A good description of the modern Swedish engineering firms that employ directly and indirectly about half of the manufacturing work force in Sweden – and as many people abroad – is to talk of a group of giant, *international marketing organizations* that develop and manufacture goods for foreign markets.

These firms, the most important of which are listed in Table 1, although based abroad, still dominate the domestic Swedish economy through export trade. Most descriptions of these companies are seen through the glasses of executives from corporate headquarters. Such descriptions, however, miss the fact that managing a viable and developing business organization is a two-way affair. Targets and activities are coordinated from the top, but ideas and work flow from below. This

Table 1. *The largest Swedish (manufacturing) exporters, 1965, 1978 and 1981*

Name of firm	Rank by size of exports			Exports from Sweden (percent of total Swedish goods exported)	1965 Percentage of total employment in foreign subsidiaries	Exports from Sweden (percent of total Swedish goods exported)	1978 Percentage of total employment in foreign subsidiaries
	1981	1978	1965				
Volvo	1	1	1	5.0	Percentage share for group 1–5 13.0	9.2	Percentage share for group 1–5 29.3
ASEA	2	4	5	2.6		3.4	
Saab-Scania	3	3	13	1.6		3.8	
Electrolux ¹	4	6	25	0.8		2.3	
Sandvik	5	5	9	2.2		2.6	
Ericsson	6	2	8	2.3	Percentage share for group 6–10 48.8	4.0	Percentage share for group 6–10 31.3
SCA	7	8	3	3.0		2.1	
Boliden ²	8	19	18	1.4		1.2	
SKF ¹	9	15	6	2.5		1.5	
Alfa Laval	10	11	20	1.1		1.6	
LKAB	11	10	2	4.6	Percentage share for group 11–20 0.9	1.8	Percentage share for group 11–20 2.2
Stora Kopparberg	12	14	12	1.7		1.5	
Svenska Varv	13	7	–	–		2.1	
Södra Skogsägarna	14	16	–	0.6		1.5	
SSAB	15	13	–	–		1.5	
MoDo	16	18	7	2.4		1.3	
Bofors	17	17	21	1.0		1.3	
Holmen	18	21	23	1.0		1.2	
Billerud	19	–	19	1.2		(1.0)	
Papyrus	20	–	–	0.3		0.9	

1 Including large parts of Facit 1978 and for 1981 also Gränges.

2 The reason for the large advance of Boliden in the export ranking is partly the rapid increase in relative raw materials prices from 1973 to 1978. Source: Eliasson, G., *De utlandsetablerade företagen och den svenska ekonomin*, IUI forskningsrapport nr 26, Stockholm 1984.

means that *without an efficient communication system within the company, based in managers at subsidiaries and at headquarters, overall firm efficiency will be hurt.*

Profitability rests on three legs

Profitability of factory processing at home depends on product development departments at home and on the network of foreign marketing subsidiaries. The three legs of marketing, production development and goods processing form the basis of modern Swedish industry.

The largest firms are listed in Table 1. Together they dominate both Swedish exports and the Swedish economy, as well as representing a major share of R&D in Swedish industry.

The modern international firm is an engineering firm that has gradually taken over the earlier dominant position of basic industries. For a century or more, Swedish industrial growth was fuelled by the profits of industries based on raw materials; iron ore and forests. Fortunately for all Swedes today, the exploitation of these profits was slow. Profits could be diverted away from consumption and the public sector to form the financial foundation for new emerging industries.

Today's industries are based on knowledge. The knowledge base of Swedish manufacturing industry is unique for such a small country,

1981 Exports from Sweden (percent of total Swedish goods exported)	Year of establish- ment	Type of activity
10.6	1926	Automobiles, trucks etc
5.2	1883	Heavy electrical, robots
4.2	1937/1891	Trucks, automobiles, aircraft
3.6	1910	White goods etc.
2.6	1862	Tungsten carbide, tools
2.5	1876	Telecommunications
2.3	1929	Paper and pulp
1.8	1925	Metal and mining
1.6	1907	Ball bearings etc
1.5	1878	Dairy systems, centrifugal equipment
1.5	1890	Iron ore
1.5	13th century	Copper mining, steel
1.5	(1977)	Ship building
1.5	1943	Pulp and paper
1.5	(1978)	Steel
1.3	1873	Pulp and paper
1.2	1873	Weapons, steel, electronics
1.2	1609	Paper
1.2	1883	Paper
1.1	1895	Paper

1981 and partly an increase in trade activities.

when seen in an international perspective. This knowledge base is predominantly located in marketing, product development and efficient production technologies. But as far as we can see, without the right marketing organization abroad, and without product-oriented R&D, factory production at home would not be profitable, and Swedish workers would not be well paid in comparative international terms.

Customer credibility and markets

Most foreign establishments of Swedish firms are engaged in marketing activities. It is natural to expect this when one looks at the kind of products delivered by the emerging modern firm, especially engineering firms operating in investment goods markets. For one thing, there is a market premium on product sophistication, on product quality and on product variation and special designs to suit the individual customer. This is not a special property of the large firms. Small firm entrants based on sophisticated product technologies appear to be quick to start up international marketing subsidiaries. In fact, it is wrong to restrict attention to "high tech" firms, meaning high tech in an engineering sense. Several studies demonstrate quite convincingly that an equally, and sometimes more important technology is "commercial" and has to do with the ability to design products for, find and deliver to and develop credibility with the right customers. The changing preferences of global markets can only be sensed efficiently through an international marketing organization.

Complex products require not only an image of quality, but also service and maintenance networks, guarantee commitments and a presence in the market. The customer who decides to invest considerable resources to learn how to use a complex Swedish investment good, found to be superior to that of competitors, will be to some extent a "hostage" to that particular knowledge. He wants some sort of guarantee that the Swedish producer will not leave the market, as soon as profitability has been bad for a few years.

Hence, the successful Swedish firm of today has taken a long-term view of the foreign dimension of its activities. It has often suffered losses for many years to build up its market position and confidence with customers. If successful, these losses are in fact *investments*, even though few firms I know of put them on record as such. Once established, if the market goes down this firm cannot afford to pull out. Rather than lowering its price, it normally invests more to protect its market position. When we have surveyed all the foreign activities of Swedish firms, analyzed the positions they have developed abroad to show a presence in the market, or because the local government requires the presence of a manufacturing facility to allow the firm to operate, we see that *at least* 75 percent of all foreign activities measured by employment are there for market reasons.

These firms operate in customer markets with no, or few, intermediate traders. They form direct links to their customers. They instruct them how to use their equipment, service it, update it and replace it when found faulty.

When the value of the product in many cases more than doubles between factory gate and final installation at a customer, this marketing

network accounts for a major part of total production activity. The development we are talking about is, in fact, the result of a profound change in manufacturing technology.

Product development

The new manufacturing technology emphasizes its use of information and knowledge. The firm has to monitor customer demands, including making customers aware of the potential of new products. It has to feed this information into R&D departments, mostly at home, to design products and to integrate the new product designs with the factory process. Together, the international marketing organization and the domestic product development exercise a strong and steady demand pull at Swedish factories. The existence of strong, international marketing organizations was decisive in helping the large Swedish engineering firms to transform themselves into new, viable competitors in the wake of the 1973/74 oil crisis. We also know that, while Swedish export shares in world trade declined significantly in the cost crisis years of the second half of the 1970's, they did not decline for the large international firms, and definitely did not if one looks at their consolidated global sales as a percentage of world trade in manufactured goods. The existence of an international marketing and production organization also made it possible for the international firm as a whole to maintain profitability, despite a disastrous cost situation at home.

Service production means product development for and learning from markets

Even though goods production is important in a high wage cost country like Sweden, goods processing cannot operate alone on its own merits. It is information gathering and exploiting, in particular marketing and product development, that constitute the knowledge base for domestic production in Swedish factories.

Without that knowledge base of engineers and marketing people, Swedish factory workers would not enjoy one of the highest living standards in the world. They have indeed been very fortunate that this knowledge existed on a broad base by the *middle of the 1970's when profits from Swedish forests and iron ore deposits were suddenly wiped out by foreign competition – and the new knowledge-based industries had to take over.*

The technological development of knowledge-based firms is almost making the emerging international firm a dominant service producer. Most activities going on within the firm are by no means new, but the service activities have grown in proportion to other activities. Table 2 gives a listing of the most important activities. Tables 3 and 4 give some statistical data on the relative sizes of some of the items in terms of cost and investment spending shares.

We find (Table 3B) that close to 40 percent of total cost applications in the 5 largest groups, and around 30 percent in the 20 largest groups, have to do with research, product development and marketing. The rest is dominated by factory processing which accounts for some 50 percent of total costs if "other items" are removed. This 50 percent figure is supported if one looks at investment spending. The investment data

in Table 3B are also more indicative of where the modern firm is heading, since they give a picture of the structure of marginal additions to firm activities. Product development and marketing are typical information processing activities. If we look deeper into the factory production and the other items, we find that various kinds of information processing are also typical there.¹ In fact, the first six items of Table 2 are all related to the task of coordinating or managing the entire financial entity called a firm, which is a task heavily dependent on efficient use of information, especially in a world characterized by increased uncertainty and disorderly markets.

Table 2. Major tasks in a business organization

1. Organizational change
2. Innovative activities (business development)
3. Product development
4. Portfolio management
5. Banking
6. Insurance and risk reduction
7. Factory production
8. Marketing and sales
9. Education
10. Welfare tasks

Table 3A. Investments¹ in the top 5, and the 37 largest, Swedish manufacturing groups, 1978. Firms have been ranked by foreign employment (Percent)

	The 5 largest groups All group	Foreign subsidiaries only	The 37 largest groups All group	Foreign subsidiaries only
R&D ¹	25	10	21	6
Machinery and buildings	45	41	52	42
Marketing ¹	30	49	27	52
TOTAL	100	100	100	100

¹ Investments in Marketing and R&D have been estimated from cost data.

Table 3B. Wage and salary costs in different spending categories in the top 5, and the 20 largest, Swedish groups, 1978. (Percent)

	The 5 largest groups All group	Foreign subsidiaries only	The 20 largest groups All group	Foreign subsidiaries only
R&D	7	3	7	2
Processing and other	63	52	70	58
Marketing and distribution	30	45	23	40
TOTAL	100	100	100	100

Note that we have been unable to separate administrative costs, etc from production process cost data and that wages and salaries in marketing and distribution are probably underestimated. The "other" item should be in the neighborhood of 15 percent of total costs according to preliminary data from an ongoing IUI study.

Source: Eliasson, G., *De utlandsetablerade företagen och den svenska ekonomin*, IUI Research Report, No. 26, Stockholm 1984.

While sales of services is a much talked about production activity, it is interesting to note that most services marketed in international trade are sold either as a quality built into the product, or as a service associated with the product. It adds to product value and, as a rule, is included in the price. The pricing of services is indeed becoming a major "industrial" know-how as the hardware content of goods diminishes. Somehow, the traditional markets are set up to deal in goods rather than qualities, and the difficult task for the marketing arm of the modern firm is to make customers aware of the importance of product quality to the extent that it can be adequately priced. There is a world of difference in selling an Electrolux refrigerator, an Ericsson-made custom-designed chip that can be put in your wallet, and a solid piece of advice how to do something. The value of the service can only be fully appreciated by informed customers. And it is an important part of marketing work to educate customers so that they can fully evaluate the quality of services of a Swedish-made product, installed in their workshop. As a consequence, producers and customers tend to form a rather stable market marriage.

Increased global uncertainty

The previous presentation pictures the manufacturing firm evolving from an industrial technology based on the manufacturing of simple products, to a product-based technology that is heavily based on marketing. However, a parallel development can also be observed.

While product development is taking longer, and R&D spending on new products is increasing, product life, once the product has been launched, is becoming shorter and shorter. The risk content of the modern firm is increasing on the product side.

In addition, since the mid-1970's, predictability in foreign markets has decreased considerably because of a *disorderly global pricing system*. Inflation is one reason for this, but badly coordinated behavior of various national policy makers kept reinforcing the erratic price movements for a long time. One side of this development can be found in financial markets where inflation is combined with disorderly movements in interest and exchange rates. The illusion of the stable, predictable world of the 1960's is gone, and the long-run perspective of company investment decisions must be viewed in a new light.

The combination of an enhanced risk position associated with the product-based firm, and the lowered predictability of global markets, has put a premium on being large as a financial unit. Economies of scale in financial functions (items 4, 5 and 6 in Table 2) are obvious. A firm that can pool resources internally for one project at a time does not risk its life, as a one-product firm does when developing one, profoundly new, product.

Economies of scale in production, marketing and product development

Economies of scale have always been the basis for various forms of banking and insurance activities. The high risk content of the activities of the modern firm has increased the need for internal financing.

Hence, banking activities have been internalized in the modern firm. The commercial banking activities of major international firms have become very large, even compared to those of commercial banks. In addition, the rapid development of new products in the modern firm has generated economies of scale in the combination of global marketing and large investments in product R&D. These factors together constitute an incentive for the growth of large firms as financial organizations. At the same time, the traditional economies of scale in factory processing appear to be on the decline in many lines of business, partly for technological reasons (in basic industries) and partly because engineering now forms the basis for the modern firm, and small scale production technology has always been practiced in engineering firms.

While economies of scale are pushing the modern manufacturing firms to develop large international marketing arms – and to concentrate spending on product R&D – fragmentation has now become a characteristic of the input side. Parts of factory production are farmed out to subcontractors, and even some of the largest firms in the world cannot keep all the necessary specialities as in-house activities.

Specialists and subcontractors are located abroad as frequently as they can be found at home, in a small country like Sweden. This development pushes the firms even further in the direction of internationalization.

That *foreign trade* promotes economic growth has become a commonplace part of everyone's understanding of economics. This is the first dimension of the internationalization of business. That the internationalization of *production* has the same growth-promoting effects has been a matter of dispute for some time. That the third dimension of internationalization – in *finance* – is an important vehicle for economic growth in the industrialized world is more difficult to envision. However, every company executive responsible for group management knows what negative impact on efficiency an inability to achieve a stable financing of trade and investment entails.

The ability to pool large internal financial resources for high risk product R&D and marketing ventures has stimulated the development of larger financial business organizations, placing even tougher demands on the managers of the new, complex organizations. This development is coupled with the continuing integration of world financial markets, a phenomenon that equates interest rates across countries with the rates of return, and the ability to pay, of the marginal company performers.

Management practices

The knowledge of how to operate large business organizations forms the backbone of wealth creation in all advanced industrial economies. This knowledge base has always tended to be overlooked or misunderstood. The reason is simple. Knowledge is difficult to define, observe and measure. And those who know are not the same as those who talk and write books.

Most often the knowledge problem has been presented as that of planning the organization. Staff people at corporate headquarters (CHQ) collect data from the various parts of the firm, analyze the data,

form an opinion and send it back. Then a new round of information gathering and analysis starts, and, after a series of rounds, a fully informed plan is assumed to take shape. This is the way planning is presented in economics text books. It places the central planning agency at the top as the "master mind". Some firms have even "tried it".

Of course, the reality is elsewhere – even when it comes to routine production activities. There is no central information base on which to run a large business firm. And the *knowledge base of all sophisticated business entities is distributed over the entire organization*. Not even at the workshop level are managers fully informed about how to run the shop – something that has come as a surprise to many when attempts have been made to automate production.

Even if all information could be brought up to the top for central analysis, CHQ staff would not know how to do it. Furthermore, the time to gather and analyze data and then to decide how to act on them is so time-consuming that, if such academic procedures were enacted in seriousness, the business opportunities would be gone before the analysis was ready. Many firms, in fact, attempted to institute such planning methods in the 1960's; the results simply contributed to the bureaucratization of business organizations. However, after half a decade of unpredictable environmental experiences, these methods were generally pushed aside, or discarded by the late 1970's. And the 1970's have taught us that running large business organizations efficiently is the art of managing talent.

Viable structural reorganizations

The final blow to the bureaucratization of company management through central planning comes when we realize the importance of the first two or three items in Table 2. An efficient operating organization is of course extremely important, but the major leaps in productivity occur when the firm is reorganized in response to new technologies or to a new competitive situation. Such reorganizations are bad experiences for "planners" in a Western business organization because they disrupt their analytical process. The planners are staff people rarely involved in forming the new competitive structures of the future.

While many of us have learned that firms compete with price, the modern business organization responds rather to competitive pressure through upgrading its products, reorganizing its structures and doing something about its markets. There is a profound difference in competing by adding more value to the product, compared to lowering the price of existing products. The development of a foreign marketing organization has been the response to new competitive pressures. Swedish engineering firms were, in some respects, initiators of that development many years ago.

It is interesting to speculate about the reasons behind this development. Did the firms gradually develop through learning about the opportunities in a piecemeal fashion, or did they – once upon a time – take a strategic decision, and then push ahead? This historical study has not yet been completed. We can only note that the *ability to run and reorganize large business organizations is the essence of the industrial knowledge base on which advanced industrial nations thrive*.

Nor does that knowledge belong to modern times only. The building of intimate customer relationships and international marketing, distribution and "service" networks was a phenomenon of even ancient times. The Vikings of Scandinavia are, in fact, more appropriately characterized as entrepreneurs, industrialists and international traders than as bloodthirsty plunderers. The Hanseatic cities of Europe were a sophisticated production, trade and financing network. The development of an *international industrial culture and technology does not come about overnight*, as many developing countries have learned. Even though it does not require a thousand years to explain why one country is wealthier than another, many decades are a useful minimum. Of the eight engineering firms among the top ten companies in Table 1, all started on a product idea around the turn of the century, and most began to grow internationally from their early days.

Delegation through improved central profit controls

The problem of top CHQ management has always been unreliable information and insecurity. The notion that CHQ management have access to all necessary information on the internal life of their organization is much too widespread, and often top management want to maintain that impression. Assessing the economic environment of the firm and deciding what then to do is one problem; moving the entire organization is another equally important and difficult one.

For one thing, top management have difficulties setting the right targets for the organization on items they do not understand. If targets are set too high, they are not taken seriously; if too low, performance adjusts itself downwards to these standards. Lower level management often tries to cheat by withholding, or biasing, information to keep their local autonomy. The consequences have been that lower level people have not been allowed very free hands from CHQ when it comes to making decisions about *how* to run lower level operations. (And when one wants to change the entire organization to cope with new environmental difficulties, consensus throughout the organization about both what to do, and how to do it, is critical.)

One cannot run a huge, differentiated global business organization without a good consensus and communication system. But new information technologies are helping to improve the transparency of large, diverse business organizations through the development of improved measurement systems, data bases and accessibility of information. For one thing, this has made it possible to impose more accurate and hence tougher profit standards on the organization and to more efficiently monitor performance against targets. With more efficient and reliable monitoring – in the view of CHQ managers – it becomes easier to allow for more decentralized decisions on how to solve problems at lower levels.

Bringing the market into the large financial organizations

More efficient monitoring is only one benefit of modern information technology.

There is no more efficient killer of initiatives and creativity than worried, uninformed and not very competent central planners, preoc-

cupied with the details of production activities. And the main vehicle for long-lasting performance of an industrial organization is its ability to constantly reorganize and rejuvenate its inner life. The potential of modern information technology is the integration of the competitive market process into the administrative system of the firm, or the ability for small scale business to function within the large organization. Top level management gets improved support in setting the right targets and keeps control of its prime responsibility, profitability. This is still a distant possibility in most firms, but technologies are evolving to help them in this direction. There are still great difficulties in most large firms to transform new ideas from the floor into investment decisions, since CHQ management usually reserve the exclusive right to be involved in these decisions.

Schizophrenia prevails

In addition, the production organization itself has an inner drive for effecting efficient production flows. Large business organizations operating in mature markets often achieve excellent flow efficiency all the way from product development to customer development. Most of the 20 firms in Table 1 have developed such an efficient flow organization. An efficient and stable flow organization is exactly what is needed to achieve efficient information handling, monitoring and organizational control.

The preservation of existing structures is very much part of any corporate culture at all levels. The organization tends to reject new stimuli, such as inventions and innovations that create too many new demands for change. However, during economic down-turns, resistance to organizational change can develop into a dangerous situation. The 70's were an ordeal for most Swedish companies, including all of those in Table 1. Several top performers of 1965 are now off the list, and a few went bankrupt during the 1970's. More would have gone under, had it not been for heavy government subsidies (four of the subsidized ones still remain on the list). Nevertheless, most firms survived on their own with, however, often a change in top management to enable it to cope with the new situation.

The human brain is constantly striving to understand and to solve decision problems. We do not know whether this is part of its innate "wiring", or an acquired feature. Except for a few specially equipped individuals, the talent to constantly change the way one looks at a problem is missing. This is, nonetheless, required of business leaders, and it is a disquieting experience for most of them to realize it. The organization of last year may turn out to be unable to handle the situation of today. It is often not possible to cope with these changes through the same set of persons. For one thing, executives must keep relearning all the time, which is difficult if the organization is run through simplified rules of thumb, and stability of the set of rules is important for flow efficiency. Even more important is that efficient flow management involves a personal commitment to the task that makes management, so to speak, associated with the current organization and rule set. Hence, a turnaround under the current management regime is difficult.

The problem of achieving both short-term production flow efficiency and viable, long-term business development flexibility is solved through the organization of people and the knowledge they represent. Such organizational structures develop in a piecemeal fashion by trial and error, and cannot be presented on overhead slides or taught in classrooms. As a rule, they thrive on contention, in the sense that groups of people within the organization are in continuous, on-going competitive relationships, and constantly jockeying for better positions.

Summing up

A few conclusions emerge from this presentation of the modern Swedish manufacturing firm. The first and foremost conclusion is that no one understands the whole of a business organization, and that the knowledge base invested in a successful organization cannot be taught at school to be repeated by somebody else. The unique competence of a successful business organization can only be defined as the combined knowledge of its individuals, and how they are organized to form a team. Not even the organization can be taught to outsiders. It is very much a question of how the members of the team communicate.

As a consequence, it is not so easy to explain how the successful firms have developed into huge international marketing networks that design and develop and to some extent manufacture products at home. But we can describe the outcome, as it looks now, even in statistical terms.

The modern manufacturing firm is a dominant service producer, that uses services in the production process and sells goods with a high service, or quality content. It does not compete by lowering its price, but through upgrading its product and/or expanding its marketing efforts.

Almost all service production consists of the sophisticated use of information, much of it related to the market.

While the modern firms develop extensive marketing networks within their own organization and form virtual market marriages with their customers, the increased demands for specialization and knowledge on the input side stimulate institutional fragmentation. As a consequence, the dividing line between the production of goods and the production of services gets blurred.

In fact, the creative initiation and the clever managing of such structural reorganizations are the origin of fast productivity change at the firm level.

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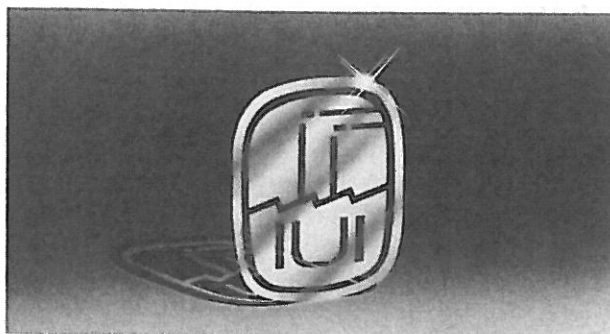
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