Experience suggests that certain definite strategies can be used by businessmen to protect their firms’ markets.

Strategy Formulation and International Competition

WILLIAM V. RAPP

NATIONALLY ORIENTED business strategies are usually unsuccessful for commodities that are or can be traded internationally. Corporations today compete on an international basis, but merely being multinational is insufficient. One must also have an appropriate international business strategy which can give telling advantages over competitors.

The increased number of firms doing business abroad attests that many managers appreciate the need to be international. Most businessmen recognize that as domestic markets mature, demand in other countries is rising. They recognize that as their own facilities become high cost, foreign locations are more economic. Yet managers rarely have an integrated or systematic approach to their international business operations. "International" operations are usually separated from "domestic," and "international" decisions are often on a country-by-country basis. These international companies are really loose federations, each unit having its own nationally oriented strategy. Such firms as well as domestically restricted firms cannot compete with more sophisticated rivals. These international competitors will serve large multinational markets and will take advantage of international production specialization. Volume and cost advantage will be translated into aggressive penetration pricing on a worldwide basis. The insular company is confronted with the equally unattractive options of losing market share to low-priced imports or of reducing prices, hence margins. To deal with this dilemma requires a conceptual framework to analyze and predict patterns of international competition and subsequently develop an integrated system of investment, marketing, pricing, and financial programs. The main elements of this analytical framework for strategy formulation are market segmentation, cost-volume relationships, and portfolio management.

International Product Life Cycles

One can observe for most products, industries, and economies a definite industrial development pattern. A developing country begins by simple primary-product processing, then develops simple manufacturing industries that produce products with high domestic demand, such as textiles or handicrafts. Subsequently, vertical integration stimulates demand for machinery, steel, and so on. As industrialization progresses, so do capital accumulation and labor force skills, which facilitate production of more technically
plex and capital-intensive goods. At the same time, rising domestic incomes create demand for such products. Demand-and-supply conditions are therefore re-enforcing with respect to the development process. The net result is a shifting competitive advantage toward the follower countries.

In general, product-cycle development is both documented historically and an accepted part of economic development. But in the more notable intra-industry evolution, industry shifts take place. One observes the influence of synthetic relative to cotton textiles, of steel relative to carbon steels, or of integrated circuits and large-scale integrated circuits relative to diodes and diodes. But both inter- and intra-industry shifts are part of the same product life cycle phenomenon.

Therefore, competitive conditions necessarily have a greater demand for sophisticated products and are better able to produce them. However, developed countries have many more of such commodities and can often produce these at lower cost than highly developed countries. The scientific and material resources needed for the invention and commercialization of a new product are correlated in a few advanced countries. A wide range of innovations are stimulated by these countries’ domestic demand-and-supply conditions: high-wage, labor-saving innovations; high personal incomes; stimulus demand for new products; large-scale space programs support technical innovations, ultimately having consumer applications; and capital and skilled labor availability permits development to occur.

These demand-and-supply conditions do not occur in less-developed countries until income levels rise. When developed countries therefore lag behind the advanced countries in a product’s development. On the other hand, they usually attain the required demand levels and being production when the advanced countries’ demand is slowing down. This process results in the intra- and inter-industry shifts noted above. Industrial emphasis moves toward industries which require more capital, more labor skill, and greater technological sophistication.

**Competitive Conditions**

The interaction of demand and production costs leading to international product-cycle evolution is fairly straightforward. However, the competitive conditions and assumptions underlying the observed shifts in comparative advantage that are coupled with industry failures in particular countries are rarely discussed. An industry’s decline is in fact due to the decline of the firms composing the industry. The United States has experienced several such situations relative to Japan, e.g., textiles, steel, automobiles, and ball bearings. Many firms in these industries have declined or disappeared given a shift in comparative advantage overseas. But some firms have not failed and continue to be successful. The reason for this discrepancy is that traditional product-cycle development assumes certain competitive conditions that need not hold, namely that:

- a firm, its production, and its markets are inexorably intertwined with a particular country
- a product whose comparative advantage is being shifted offshore cannot be replaced by newer, more technically advanced products
- no new defendable market segment is emerging which can replace the older product’s importance to the firm
- the declining product is of such significance that failure to produce and sell it threatens the firm’s existence
- a firm is not strategically responsive to changes in its worldwide competitive position

In all industries which follower countries have successfully developed, the conditions above have always held. Whether one examines cotton textiles, shoes, carbon steel, automobiles, television, or ships, at some time the United States was the world’s low-cost and major producer. Yet when production economies and world demand growth moved offshore, U.S. producers did not generally respond in terms of overseas investment or exports. In those cases where they did invest abroad, it was to supply the local market only and not

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to develop a low-cost production source for the United States and third-country markets. This was true even though an offshore production strategy might have enabled these companies to continue U.S. production of their high-technology products and to continue employment of their highly skilled, high-value-added personnel such as engineers, designers, staff specialists, and managers.

Ball bearings is a case in point. American companies were pressed by Japanese competition because American producers' high-profit items were the high-volume, low-technology products which represented the bulk of their sales. However, their comparative production economics only justified production of the limited-run, high-technology bearings in the United States. Absolute advantage in the low-technology end of the product line had shifted offshore. Failure to source the volume product abroad thus resulted in an uncompetitive position relative to Japanese producers, penetration of the U.S. market, and loss of major end-users. Under the resulting cash flow conditions, American ball bearing manufacturers could no longer sustain their R and D efforts, employ their highly skilled U.S. personnel, or produce the high-technology items in the United States. Many went out of business, and the industry is no longer a viable and competitive part of the U.S. economy.

But shoe companies such as Thom McAn that source certain items overseas, or textile companies such as Kayser-Roth and Indian Head Mills that specialize in and dominate growth segments within the U.S. textile market (e.g., panty hose or fashion fabrics), demonstrate that pursuing strategies appropriate to growth, market change, and worldwide competition can be good business in a declining market. A firm should not be confined by the geographical boundaries of its home-country market or by the type of goods it first produced.

Product-Market Segmentation

However, many U.S. and European firms have not been responsive to emerging markets at home and abroad nor to the changing economics of a given production location. It has been this unresponsive attitude in combination with the competitive behavior of new firms and/or more sophisticated rivals which has allowed successful followers to grow and compete. But this lack of response may be partly due to inadequate analytical tools.

One way of analyzing the competitive implications of new demand-supply developments for strategic purposes is in terms of product-market segmentation. [A product-market segment is determined by the economics of supplying (production and distribution) a customer group with a common purchasing attribute.] Many companies have difficulty competing with internationally oriented competitors despite an understanding of world trade patterns because they lack basic insights about changes in market segments. They do not understand the competitive interaction created by changes in production economics and customer groupings. Since competitive survival demands domination of a selected group of segments in the world as a whole, successful participation in world markets requires an explicit concept of segmentation. Major successes in world markets, despite overall industry declines, are attributable to an extension of a clear segmentation concept. For example, the success of General Motors vis-a-vis Ford in the U.S. market is directly attributable to Alfred P. Sloan's perception of several emerging passenger-car market segments (according to income levels) which made production of "a car for every purse and purpose" appropriate.

A product-market segment exists if there is a sharp differential in the cost of or ability to supply a given product to an end-user group (e.g., customers needing after-sales service, customers subject to import competition, or customers who are price sensitive). A product-market segment therefore defines a particular relationship between revenues (sales to customers)
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and expenditures. Any large change in this relation-
ship indicates a strategic problem. For example, Japa-
nese and European manufacturers dominate their
small-car markets. This market segment represents
the bulk of their sales, production, and profits. On the
other hand, the U.S. producers' strength is in the
medium-car market. Yet it is the U.S. small-car mar-
ket segment that is growing rapidly, and vehicle pro-
duction economies are such that it is easier to move
horizontally than vertically. Small-car production is
different enough in terms of parts, tooling, and so on
to represent a significant additional cost to U.S. pro-
ducers, but of course no additional cost to foreign
small-car producers. Since ocean logistics costs are
falling dramatically and U.S. tariff rates are low, no
barrier exists between European or Japanese sourcing
points and the United States. The logical response
for U.S. auto producers would seem to be to com-
pletely source abroad for the small-car segment. This
strategy would benefit the U.S. economy as well as
U.S. auto producers since producers could continue
to support their distributors, designers, engineers,
staff, and managers even if a few assembly jobs ap-
ppeared to be exported. (In fact these jobs are not
exported since foreign cars would be sold into this
market segment.)

Growth and technical change imply the emergence
of new market segments even if an industry is declin-
ing relative to other sectors. Failure to dominate each
new segment opens an opportunity for competitors
who may grow quite large. The innovator's advan-
tage is not that he will inevitably maintain his posi-
tion but that he has an initial advantage in pursuing
new segments while holding on to old ones. But he
must have a strategy to continue dominance over his
competitors.

One type of emerging market segment is the devel-
opment of markets in follower countries. Other new
segments may be the large price-sensitive user who
requires little service or the affluent, style-conscious
consumer in a world market. Geography is only one
possible segmentation scheme, and it is appropriate
only when protection or other barriers exist. It is not
appropriate when large reductions in ocean logistics
costs and tariff barriers between industrial countries
create world markets. U.S. steel and automobile pro-
ducers made a major strategic mistake when they
failed to recognize what volume could do to ocean
freight costs and the competitiveness of foreign
products in the U.S. market. More generally, there
is a new relationship between revenues and expendi-
tures every time a segment emerges, the parameters
defining an existing segment shift, or the supply cost
to a segment change. Those new situations represent
strategic problems.

Traditional product-cycle theory states that the cost
of supplying a given segment shifts from country to
country and that this cost shift parallels the emer-
gence of a corresponding geographical market seg-
ment. The net result of these two conditions in the
past has been the emergence of new competitors
overseas.

Competitive Development

The migration of competitive advantage from origi-
nal producers to follower firms, either domestically
or internationally, is not just a function of changing
factor costs and demand patterns. It is also the result
of the innovator's failure to control this competitive
evolution by pursuing an international business
strategy aimed at dominating a set of product-market
segments.

Dominating a market segment means controlling
market share. Loss of dominance means loss of world
market share. A convenient way of appreciating the
competitive importance of world market share is in
terms of cost-volume relationships (experience
curves). When combined with segmentation analysis,
this approach clearly demonstrates many of the rea-
sons for competitive success and failure.

Cost-Volume Relationships

A critical aspect of many industries' competitive
development has been their demonstrated ability to
lower rapidly a product's supply costs (especially in
high-growth follower economies such as Japan).
Japanese firms have usually begun as internationally
high-cost producers in most products, but in a few
years they have become very competitive. This phenomenon will be illustrated shortly for Japanese television producers, but it applies to a wide range of commodities and countries. Traditional product-cycle analysis explains this increased competitiveness as the result of market growth and changing factor supplies. But this explanation has an unwarranted ring of historical inevitability, and on further examination it is analytically unsatisfying. A firm's ability to lower a product's cost and price in fact depends on the volume it produces. The key determinant of volume is world market share.

The Boston Consulting Group and other researchers have demonstrated for a variety of products that total cost per unit in constant dollars or other currency will decline by a characteristic amount (usually 20% to 30%) each time accumulated production experience (total amount ever produced) doubles. This statistical phenomenon is observed in many localities, including the United States, Europe, and Japan, and is an accepted part of cost projection formulations in the aircraft and semiconductor industries. Though the precise reasons for the relationship are not well documented, it appears to be a combination of learning-by-doing, management experience, cost-reduction investments, and economies of scale. Because the concept relates the rate of cost decline with the rate of accumulation, a company's cost-experience relationship is plotted on log-log paper and is usually a straight line. (Figures 1 and 2.)

Price Experience Curves
Figure 1: Integrated Circuits, U.S. (monthly price)

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The cost-experience effect over time is more noticeable in new products. New products have a small experience base and a high demand growth; accumulated production experience can double rapidly, and costs will fall accordingly. In mature industries, the effects of inflation will obscure the decline in real dollar (yen, marks, or francs) costs. To obtain an accurate picture, one must factor out inflation.

The distorting effect of inflation is eliminated by deflating the current dollar (or other currency) unit costs by the GNP deflator. Given a product's historical experience curve, one can predict future real costs at various levels of accumulated experience. To estimate actual future costs, though, one must reinitialize by multiplying the constant cost projections by the expected rate of inflation.

The Importance of Market Share
Given the relationship between cost and volume, an individual firm's cost position within an industry depends on its growth relative to the entire industry, that is, on its market share. Conversely, an industry's ability to lower prices for a given amount of production experience depends on the market shares of the individual producers, i.e., on the industry's concentration. (With greater concentration, industry experience is spread among fewer producers.)

The implication of the cost-experience effect for international competition is that growth directly de-
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termines a competitor's ability to accumulate experience and lower costs, and market share determines his ability to lower costs relative to competitors, domestic and foreign. The successful follower is therefore the firm who captures a dominant share of the world demand represented by its home-market growth and subsequently by export demand.

Innovators and Followers

For example, if a follower firm accumulates experience at 5% per year, it will double experience in less than three years and will lower real costs 50% to 30%. If inflation in his country is 5% a year, the firm's current costs will decline between 5% and 15% over the three-year period. If industry demand is growing at 15% per annum, and the industry growth rate has approached industry demand growth, the firm is capturing more than its share of incremental experience. It is gaining market share relative to competitors and is improving cost position.

At a fixed exchange rate, our follower firm also lowers current dollar costs. If a mature U.S. market is growing at 5% with the same 5% inflation rate as the follower, the follower is rapidly gaining absolute cost advantage relative to U.S. producers (innovators), assuming relatively stable U.S. market shares (a reasonable assumption in a mature market). By definition, however, the follower's production serves to satisfy growing domestic demand for products first produced elsewhere, frequently in the United States. Therefore, U.S. innovators have begun or gone through the product's development or growth phase. They have substantial cost-experience advantage relative to the follower. The follower's ability to serve his country's emerging world market segment has thus depended on transportation cost differentials, local government protection (tariffs, quotas, and subsidies), and/or no foreign marketing effort. Once it is producing, though, the firm's ability to become internationally competitive is a function of its initial real production costs, the slope of the experience curve, its country's inflation rate, exchange rates, and the firm's accumulation rate.

Conversely, an innovator's ability to maintain price competitiveness and dominance in a product it has introduced depends on an appropriate combination of the following:

- lower real start-up and initial production costs than the follower
- steeper experience curve slope
- lower inflation rate
- continuous devaluation
- faster accumulation rate

In reality, few of these conditions can be met. The innovator usually has higher initial production and development costs than the follower. Given a product's existence and the availability of production equipment and know-how, the cost of transferring a given technology decreases over time. The follower need not accumulate equivalent experience to become competitive.

Actual international comparisons by The Boston Consulting Group have yet to show any appreciable slope differentials for the same product between leading industrial countries. Technological factors and industrial organization at a given stage of development for the same product would seem similar, and cost management by successful firms producing the product are roughly equivalent.

Inflation and exchange rates are macroeconomic variables over which firms have little control. Nevertheless, it must be recognized that U.S. inflation rates, for example, which have been approaching Japanese levels since 1967, have seriously affected U.S. companies' competitiveness. Until that time, the 2% inflation differential between the United States and Japan offset the relative real-cost reduction of Japan's higher manufacturing growth rate. The recent revaluations compensated for the absence of this inflation differential during the last five or six years.

However, despite the above factors, innovators do have some control over follower firms' ability to capture world market share, to accumulate experience, and to become cost competitive. This is true even if they have not generally done so. Innovators usually have lower current costs when the follower begins production (even though start-up costs in real terms are higher). There is thus a minimum accumulation rate that a follower requires over some time period.
Figure 3
Real Growth and Annual Cost Decline

The annual rate of cost decline is equal to the mathematical slope of the experience curve times the accumulation rate. The mathematical slope equals

\[
\log S - \log 2
\]

where \( S \) is the slope of the experience curve. For a 75% curve, \( S = 0.75 \) and the mathematical slope, \( \approx 42 \).

to become cost competitive. The innovator can remain the dominant and low-cost producer if the follower fails to grow at this rate.

During the follower’s initial production phase, the innovator can rarely accumulate experience as rapidly as the follower. The innovator is the initial producer and has a larger accumulated production base; consequently, he takes longer to double experience. As the follower’s smaller market is saturated and as its experience base gets larger, though, further doublings and cost reductions become more difficult. The innovator must use his initial cost advantage, therefore, to participate in the follower’s home market and/or shut off export development. (This strategy may still require moving offshore later, but then production should be concentrated at the new location.) Only in this way can the innovator deny the follower the growth necessary for fully competitive cost reduction. But his time horizon is limited.

An easy way of assessing a follower’s competitive requirement is to calculate the “permissible” growth (accumulation rate) gap allowed by differences in the follower’s rate of inflation or by exchange rate revaluations. (This gap equals the inflation or exchange rate differential divided by the mathematical slope of the experience curve.) Given current costs and prices, if a follower’s relative growth exceeds this “permissible” gap, the follower’s cost position is improving. A smaller inflation differential and/or a steeper product experience curve narrows the “permissible” growth gap for a particular product (Figure 3).

The object of a successful international business strategy is to capture enough world market growth so that no foreign (or domestic) competitor can exceed the “permissible” growth gap long enough to become cost competitive.

But many U.S. and European innovators have not captured this required market growth. Thus, for many years, follower firms in Japan and other countries have exceeded the “permissible” gap in many products. At fixed exchange rates, this normally leads to large and persistent foreign exchange surpluses for the high-growth economy due to improved relative and absolute cost position. These surpluses can then be offset by tariff reductions, exchange rate adjustments, or other measures. But even though total trade may become balanced, specific products and industries will continue to lose competitive position. Not all products have the same experience curve slopes or are growing at the same rates.

Further, a currency appreciation or tariff reduction raises a competitor’s relative prices only once. If comparative government and business policies do not change, relative long-term growth rates will not change and relative annual cost changes should continue as before. That is, devaluation represents an expense investment by a country in buying world market share. Failure to support this expenditure by
new marketing and investment policies domestically and overseas implies that the country’s producers will not permanently improve their accumulation rate, their world market share, or their relative cost position. Another devaluation then becomes inevitable (e.g., the pound or dollar cie-die the yen or mark).

The Case of Color Television

Japanese television producers offer a pointed illustration of competitive development along the lines described above. It is a pattern systematically repeated in international competition. Television is especially interesting, however, because U.S. companies’ strategic errors were exemplified not once but twice and because the rapidly growing Japanese market was unprotected compared to computers, steel, or autos. The government never considered consumer electronics a strategic or an important industry. Its development did not depend on special quotas, marketing restrictions, high tariff barriers, or other protections. There was little to prevent U.S. exports and Japanese market penetration when the United States was the world’s low-cost producer. But no real effort was made. The eventual size and competitiveness of Japanese producers testifies to U.S. firms’ strategic misperception. (Color production in 1970 was $1.9 billion.)

<table>
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<tr>
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<th>United States, %</th>
<th>Japan, %</th>
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<tbody>
<tr>
<td>1962-1965</td>
<td>56.0 41.0</td>
<td>170.0 196.0</td>
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<tr>
<td>1970</td>
<td>36.0 12.0</td>
<td>187.0 182.0</td>
</tr>
<tr>
<td>Real Accumulation Rate</td>
<td>170.0 196.0</td>
<td>187.0 182.0</td>
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<tr>
<td>Real Growth Rate</td>
<td>35.0 12.0</td>
<td>170.0 196.0</td>
</tr>
<tr>
<td>Annual Decline in Constant Dollars or Yen (85% curve)</td>
<td>13.0 9.6</td>
<td>39.6 45.6</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>3.1 4.0</td>
<td>4.9 4.7</td>
</tr>
<tr>
<td>Annual Change in Costs in Current Dollars</td>
<td>-9.9 -5.6</td>
<td>-34.7 -40.9</td>
</tr>
<tr>
<td>Competitor’s Cost Advantage</td>
<td>— —</td>
<td>24.8 35.3</td>
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Note: Exchange rate fixed at ¥760 = $1.00

A brief comparison of the U.S. and Japanese price-experience curves for color television in Figure 4 indicates that the U.S. maintained a large cost-price advantage before 1965. In 1962, Japanese average wholesale prices compared with U.S. prices were $500 a set versus $350. Still, there were no exports to the Japanese market despite its rapid growth. Just how rapidly production grew compared to the United States is documented in Table 1. Japanese producers between 1962 and 1970 accumulated experience at 1705 per year versus 996 in the United States. The result of this large differential accumulation rate was inevitable. A differential accumulation rate of 1145
more than exceeded what could be permitted by a 15 to 25% inflation differential, and absolute cost advantage at a fixed exchange rate was gained quickly. Yet this was based on domestic market growth. Exports did not begin until Japanese domestic prices were below U.S. prices, and penetration of the U.S. market did not occur until the price differential was substantial and third country export experience and distribution had already been developed in monochrome (Table 2).

This was a typical “follower” scenario of competitive development. But as the economics of monochrome and color production have shifted in turn from Columbia Journal of World Business

We have now described and illustrated the underlying competitive dynamics responsible for traditional product-cycle development. However, this analysis also indicates an effective strategy alternative.

Traditional Product-Cycle Scenario

After successful domestic development, a follower generally exports first to less developed countries, where there is little domestic competition, where demand is growing, and where the innovator has no innate advantage. These exports serve multiple competitive functions. They impair the innovator’s ability

<table>
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<th>Table 2</th>
<th>Japanese Production and Exports</th>
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<tr>
<td>(Monochrome Television, 1,000 units)</td>
<td></td>
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<tr>
<td>Production</td>
<td>157</td>
</tr>
<tr>
<td>Exports</td>
<td>—</td>
</tr>
<tr>
<td>Percent to U.S.</td>
<td>—</td>
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<tr>
<td>Export/Production</td>
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</table>


Japan to countries such as Taiwan and Korea, the response of Japanese managers has differed from U.S. experience. Their response to the emergence of competitors in the LDCs, the belated move of American companies offshore, and their own changing production economics, has been to establish monochrome and now color television plants in Taiwan or Korea. Again unlike U.S. producers, they are not supplying just their own domestic market in Japan but are using or are planning to use these sources to supply markets worldwide (the United States, Japan, Europe, the LDCs, etc.). In this approach they remain one step ahead of U.S. manufacturers who produce offshore only for the U.S. market; U.S. manufacturers will lose relative cost position owing to their smaller volume and experience growth at the new location. Competitive initiative in the television industry would seem to have passed from the U.S. innovators to the Japanese followers.

to grow and lower costs relative to the follower. They also enhance the follower’s ability to grow and to lower costs. Competitively, it is a zero-sum-game with a double relative-cost effect. These overseas markets are very important when the follower’s home market is relatively small and quickly saturated, or when costs need to be lowered to stimulate additional domestic demand. Finally, these exports develop overseas marketing experience.

All these factors are necessary to gain enough competitive strength to penetrate the innovator’s market. This task is always difficult because the innovator’s domestic market is growing slowly, there is in-place capacity, and domestic competition exists.

However, the follower often benefits from economic conditions present in the innovator’s mature market. The innovator has higher wage rates and slower productivity increases. The innovator also frequently decides to forgo continued growth (requiring invest-
ment and aggressive pricing) and attempts to earn a higher return on past investment by maintaining a constant real price level (price umbrella). Quotas and high tariffs are seldom applied until the home industry is in trouble. Further, a mature market usually has large, price-sensitive users that are easily segmented (e.g., U.S. ball bearings market). Moreover, the innovator often feels that foreign markets and competitors are not large enough to justify fighting protective policies or aggressively pursuing export markets.

These policies in the long run are self-defeating. As a market matures, it becomes increasingly price sensitive and vulnerable to low-priced products. Ignoring foreign competitors and holding a domestic price umbrella results in eventual market penetration by low-priced imports and hence competitive decline. These competitive forces have constantly pushed innovators into the development of newer and more sophisticated products or of new domestic market segments. If no new products or markets are found, the firm declines or disappears. This competitive process is repeated by a second follower (e.g., LDC), as appears to be happening in textiles and other simple manufactured products.

However, this traditional product-cycle view is simplistic if it argues the required concomitant demise of major companies making these products in the innovator or first follower country. This view fails to uncouple a firm's future production economics from its country of origin, its current production costs, and its domestic market—all invalid assumptions. The multinational or international firm has a wider strategy and more successful future open to it because it can utilize segmentation principles and cost-volume interaction on a worldwide basis.

Traditional product cycles have evolved because of the almost universally common managerial behavior described above. However, the fact that wider options are open is apparent. Past managerial behavior need not be continued. There are in fact sensitive points within the product cycle for each country and firm: initial production, initial export development, and initial penetration of the innovator's market. At these stages, key variables such as margins can be influenced by external pressures. The ability to apply or resist such pressures depends on a firm's relative competitive position in the product cycle and its integrated system of investment, marketing, pricing, and financial strategies.

**Implications for Individual Corporations**

It is now clear that business success depends on the development of an integrated set of investment, marketing, pricing, and financial strategies designed to ensure worldwide dominance of selected product-market segments. The conceptual basis for this overall strategy formulation is experience analysis and market segmentation. These two insights into international business strategy can help a manager turn traditional product-cycle development into an asset rather than a problem.

More specifically, an innovator firm should use aggressive or offensive strategies in growth markets to capture market share and to lower costs. But defensive strategies should be employed in mature markets to maintain market dominance and generate cash flows.

A follower firm, on the other hand, should pursue the same strategy as the innovator in its domestic and in second follower markets. Later, the follower will want to penetrate aggressively the innovator's mature or declining market. Such a strategy will continually provide the firm with a spectrum of growth and mature business, reducing long-run business risk.

But successful implementation of this strategy requires that the firm view the world as a single market composed of discrete market segments. This view reveals the importance of changes in world market share for both international and domestic competition. Yet it does not obscure the need for different implementation strategies in different market segments.

The value of market share (domestic or world) depends on one's ability to make this analysis and implement the appropriate strategy. Thus, an Italian or French firm must realize that a competitor's export sales reduce his costs and improve his overall competitiveness just as much as his domestic sales do.

Similarly, Japanese exports to the United States or
to Southeast Asia improve Japan’s competitiveness. European firms in Europe. Japanese sales in Europe have an analogous competitive effect. Thus, it is naive for U.S. auto producers to see Europe as an alternative or safety valve for Japanese exports. Those exports will merely make Japan relatively more competitive in both markets and worldwide (e.g., automobiles).*

**Strategies for Multinational Firms**

At present, U.S. companies usually have the advantage of being innovators for many products. Competitive relations between Japan and Europe, however, are more direct as both are followers at similar stages of development. That is, they compete within the same phase of the product cycle in many commodities. Their relative long-term success depends therefore on their ability to succeed as followers. The ability of the United States to defend its innovator position, on the other hand, represents the opposite side of the competitive equation.

The strategic issues confronting a large multinational firm compound in complexity according to the diversity of products it produces. It must pursue a different strategy for each product in each market segment, depending on its market share, the market segment’s growth rate, and the nature of the product. That is, LDCs lack the demand for and the ability to produce technically advanced products. However, they are able to produce mature and technically unsophisticated products at lower cost than advanced countries. In the case of sophisticated products, therefore, the multinational corporation should try to dominate its domestic market. (Presumably this is the market in the innovating country.) It should then try to preempt growth in follower countries to maintain domestic and international competitiveness. Failing this, it must confine follower firms to their home markets and prevent competitive export development.

This strategy should enable the firm to enjoy market leadership and high profit margins as growth slows in each geographical market segment. If this is done for all product lines in important market segments, the firm will have a mix of high and low growth businesses in which it has good market position. As growth requires cash to finance investment and aggressive pricing, this means that low-growth businesses will be cash generators and high-growth businesses will be cash users. Thus, the above strategy should produce a kind of balanced and secure portfolio of low- and high-growth businesses dominating a spectrum of market segments.

If the multinational firm cannot dominate its domestic market or if it is located in a follower country, its strategy should be somewhat different. Its objective should be to capture the growth emerging abroad or in a new domestic market segment. (This strategy may require moving production facilities overseas to gain lower costs.) After establishing a dominant position in this new segment, the company should then use this competitive-experience base to capture export markets from the dominant producer, first probably in the LDCs but later in that producer’s home market. At the same time, the challenger must defend against development of the next round of followers.

If the challenger is headquartered in the innovating country, this strategy sequence is probably the only way to convert an unfavorable situation into success. Failure to pursue this strategy on the other hand will result in a permanent cost disadvantage in the innovating country’s low-growth market.

The programs that a multinational firm can independently (of government) employ to achieve its strategic goals are roughly as follows:

**Investment Strategies:** The dominant producer should continually develop new products to supply the high growth and sophisticated product-market segments emerging in the advanced countries. At the same time, he should combine this new product investment with international sourcing investments in established products to preempt growth emerging in other countries or to serve mature domestic market segments.

On the other hand, follower or nondominant producers should expand aggressively in their own or emerging markets, building an experience base. They should invest abroad only to gain access to technology, raw materials, export markets, or a lower-cost production facility. They should not dilute experience.
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Once they have built their strength on the new market segment, they should fight for world market position, playing on the dominant producer's weaknesses in other markets. Having achieved this, they will be the new world leader and should pursue a dominant producer's strategy.

Marketing Strategies: Though many firms see the importance of domestic market dominance, few perceive the importance of world market share. Exports are often considered a fringe area or an incremental production market. However, production experience effects are independent of where the product is sold. Overseas markets are thus as important as domestic markets. An established international marketing policy and system can result in lower overseas distribution costs and lower production costs, permanently increasing exports, and worldwide cost competitiveness.

Pricing Strategies: Companies should vary their prices depending on the location and characteristics of a market segment. Low export prices enable a firm to penetrate rapidly foreign markets and to keep foreign competitors from gaining a foothold outside their domestic markets. At the same time, a dominant producer can reap profits from his large but slow-growing domestic market by maintaining profit margins at a level that stabilizes current market shares. This strategy preserves his dominant domestic position for a longer period by frustrating potential foreign and domestic competition and by enabling him to fund overseas growth from domestic sales. An export pricing policy of "domestic price plus freight and insurance" is inappropriate and dangerous in this context, even if dumping issues must be watched.

On the other hand, if a foreign competitor does penetrate a firm's domestic market, that firm should lower its domestic prices. This can be a problem for a dominant U.S. producer if such a price cut threatens smaller U.S. producers and invites possible antitrust action. But this consideration only makes an aggressive export pricing policy an even more important competitive element for large U.S. multinational companies. It is the only way to keep a foreign competitor from getting large enough to enter the U.S. market.

Financial Strategies: As growth uses cash, a low dividend payout and aggressive use of debt facilitates high financial and thus high business growth. In meeting foreign competition and in developing high-growth (foreign or domestic) markets, differential financial policies are thus required. When growth slows, a higher net cash flow is expected from a given product-market segment. If the same net cash flow were required from a high-growth foreign subsidiary or high-growth export market, the business would be starved for cash and could not pre-empt growth. Foreign competitors would then gain world market share and would increase their relative competitiveness. An appropriate financial strategy therefore leverages its high-growth businesses while funding from its lower-growth businesses.

Implementation in Semiconductors

An excellent example of an integrated use of these strategies on a multinational basis is the U.S. semiconductor industry, where experience-curve analysis is well understood and widely applied. This industry now produces fourth- and fifth-generation semiconductors, integrated circuits, and large-scale integrated circuits in the United States, but it produces older established products abroad (e.g., in Korea, Hong Kong, Taiwan, and Mexico). These products are then exported to the United States and other countries where the parent company markets them. Production costs in these foreign subsidiaries are about 30% below Japan's for the same products.

The American producers have successfully encircled potential Japanese competition. They have been accidentally helped in this process by the fragmentation of Japan's semiconductor industry, but the basic strategy remains their own. Moreover, the industry is pressing for freer access to the Japanese market using Japan's favorable trade balances with Taiwan and Korea as a lever. The U.S. firms have simultaneously preempted any future local competitive development in sourcing countries such as Taiwan and Korea. In sum, the industry as a whole has pursued an extremely intelligent international competitive strategy.

Many industries, such as aircraft assembly, ship-
building, and steel production, are composed of what may be called single-product, single-plant firms. Their strategic problems are somewhat different than those of multinational firms. These problems are more restricted, and the industries have fewer strategic options. They must rely heavily on pricing and export marketing to capture world market share and to contain potential competitors. Overseas investment is limited as a strategic tool for capturing incremental world market growth and for reducing costs.

**Strategies for Single Plant Firms**

The strategic objectives of these industries, however, remain the same as those of multinational firms. The single-plant company must still dominate a spectrum of product-market segments in the world as a whole. It should thus attempt to prevent competitive development in follower countries. Failing to do this, it should shut off their potential export development, even if this tactic means lower profits on exports to certain growth markets. For such companies, trade liberalization and antitrust are therefore critical issues. Export market access is necessary for continued world dominance, and a large domestic market provides a secure experience and cash flow base.

The strategic program for the single-product, single-plant firm is indicated as follows:

**Investment Strategies:** The dominant producer must invest in process as well as in product improvement. Maintaining world market dominance from a single sourcing point requires not only developing and dominating new segments but keeping cost competitive in old ones. Investment for both high-quality products and lower costs is necessary. The ability to shift to other production sites is restricted.

**Followers:** On the other hand, should try to build and maintain a domestic experience base from which an aggressive export strategy can be launched. Some specialized investment with respect to a world market segment is probably advisable.

**Marketing Strategies:** Exports are absolutely critical to the single-plant firm's continued competitiveness. Though domestic market dominance is necessary as an experience and cash base, once domestic demand levels off, future growth and cost reduction ultimately depend on exports. The single-plant firm must seek to reduce overseas marketing costs through integrated handling systems, specialized transports, cooperative marketing organizations, trading companies, etc. Aircraft and shipbuilding have lent themselves to this kind of world strategy owing to their "built-in" transportation and large unit size.

The firm's objective is to dominate a spectrum of world market segments by creating technological, cost, price, service, legal, or other barriers. This program will discourage entry by potential competitors in either follower countries or related industries. Worldwide competitive surveillance of potential competitors is an important element.

**Pricing Strategies:** Differential pricing strategies at home and abroad are the single-plant, single-product company's most important strategic tool. Differential pricing can keep foreign competitors from getting a foothold outside their countries. It may even prevent them from developing their own domestic industries. At the same time, differential pricing allows the firm to earn large enough profits in mature markets, particularly in its domestic market, to fund penetration of new growth areas. By capturing world market growth in this manner, the firm will lower its costs further and will enhance its profitability in all markets. A "domestic price plus freight and insurance" export pricing policy can be disastrous when a firm lacks the overseas investment options open to the multinational, multiproduct corporation.

Domestic pricing policies should be designed to maintain market dominance and to discourage imports. Higher margins and profitability can probably be anticipated more in the domestic market than in the export market. But the firm must guard against holding a real price umbrella, trying to recoup past investment too quickly.

**Financial Strategies:** Heavy use of debt and low dividend payout are important in the early stages of domestic market growth and development. However, they are less necessary for the successful producer in later stages of development. (They may be appropriate for a follower or nondominant producer as a way
of compensating for a low market share and high-cost position.) Still, some sacrifice of returns on previous investment will be required to pursue appropriate differential pricing strategies.

**Implementation in Shipbuilding**

An outstanding example of a successful follower and consolidation strategy for essentially single-product, single-plant companies is found in the Japanese shipbuilding industry. Japan’s shipbuilding capability was essentially destroyed during World War II, and previous production experience was largely related to warships. However, with government support the industry developed rapidly in response to raw material shortages and large postwar replacement demand. Based on this large and rapidly expanding domestic demand, the Japanese achieved dramatic cost reductions (Figure 5). This was especially noticeable for the bulk carriers and tankers needed to supply raw materials and oil to Japan’s growing economy. These large cost declines for bulk carriers and tankers in turn revolutionized the economics of shipping and transportation while stimulating Japanese ship exports. Japanese shipbuilders’ export success was, however, the result of a conscious business strategy:

- continued reductions in cost per ton (experience effect) supported by technological improvement and rapid capacity expansions
- world market segmentation, initial penetration being in the free-ship markets (Liberia, Greece, Panama, and Norway), combined with aggressive international marketing and differential pricing policies
- highly leveraged operations substantially financed by the Industrial Bank of Japan and the Japanese Export-Import Bank

Maintenance of these strategic policies has resulted in Japan’s continued dominance of the world shipbuilding industry for several years, especially for bulk carriers and tankers. Given cost-experience effects, this world market dominance is self-reinforcing as long as basic business policies continue. The only option for other shipbuilders is to find a new segment that can be expanded and defended.

**Taking the World View**

In meeting modern international competition, merely appreciating traditional product-cycle development or having “international” business operations is inadequate for long-term success. A company must have an explicit international strategy that incorporates a definite segmentation scheme and is based on an understanding of cost-volume relationships. Only a world view of products and markets can offer long-term solutions to strategy problems for internationally traded commodities. Companies that fail to take such a view are taking a large business risk since they will become subject to increased competitive pressures from truly internationally oriented rivals, both domestic and foreign. Recognizing this fact is the first step in international strategy formulation and in meeting international competition. However, ultimately the firm must become an integrated international company with a system of investment, marketing, pricing, and financial strategies with which it can dominate a spectrum of worldwide market segments. Otherwise, it will find future survival difficult in an increasingly competitive world environment.

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NOTES

1 The author would like to express his appreciation to his former colleagues of The Boston Consulting Group for their comments and advice, especially Dr. Seymour Tilles. However, he takes full responsibility for the views and errors contained in this article.

2 This historical and on-going process of the competitive migration of products and industries from country to country was first identified formally by Professor Akamatsu in the 1950s. Professor T. Voorhies in his 1966 Quarterly Journal article has given it a more precise and elegant statement. The author has made a thorough documentation of its applicability to Japan in "Theory of Changing Trade Patterns," Yale Economic Essays, Fall 1967.

3 The Boston Consulting Group, Perspectives on Experience.

4 Since cost data are not always available, one can derive curves from price data on the assumption that price follows costs over time and market shares change slowly. The phenomenon is basically a country-firm-cost relationship and a country-industry-price relationship. Price curves are displayed in this paper for two electronic components and for television. Cost is total cost to the end-user, including direct overhead and marketing.

5 If industry growth is $g_n$, and the growth is accumulated experience at time $t$ is $g(t)$, then

$$1/(1 + g(t)) + g_n = g_n(1) + g(t).$$

Thus, the accumulation rate substantially exceeds the market growth rate in the early production stages, but approaches it as the market matures.

6 In the case of a domestic competitor, the "permissible" gap is zero as there is no inflation or exchange rate differential, although one should make allowance for possible regional cost differentials.

7 Although this discussion is restricted to color television, monochrome followed a similar competitive development. (This is discussed in J. C. Beagles and W. V. Rapp, "Competitive Impact of Japanese Growth," in J. Cohen, ed., Pacific Partnership: U.S.-Japan Trade, Prospects and Recommendations for the 1970's, New York: D. C. Heath & Co., 1972.) With the examples of transistor radios, tape recorders, stereo equipment, and in general monochrome televisions, as guides, there seems little reason for U.S. misconception. Yet it did occur again. It is for this reason that the effectiveness of revaluation is open to question. A price advantage is effective only if it is used for market penetration. But U.S. television producers twice did not use a price advantage when they had it, and the price differential was systematically eroded.


9 This fragmentation results from the Japanese government's insistence on the diffusion of technological information and the encouragement of multiple producers. This policy diluted the experience base available to any one firm to become internationally competitive.

10 Some international companies will have divisions which are essentially single-plant firms. They should be run differently from those in which more flexibility is possible. Indeed, it is a strategic error to treat a single-plant operation as if a multiplanting strategy were appropriate.

11 A similar argument could be made for the Japanese steel industry. J. Dresner, T. Hout and W. Rapp, "Competitive Development of the Japanese Steel Industry," ibid.

12 Shipping economies have reduced raw material costs for steelmaking to such an extent that economically efficient steel mills can only be built at harbor sites. This in turn has made Japanese steel and thus ships less expensive, creating a greater demand for both steel and ships.