

International Trade in Technology – Licensing of Know-How and Trade Secrets

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Introduction

One of the effects of globalization is the relocation of production from the technology rich countries towards low labour cost countries. This is a threat for SME suppliers and manufacturers in technology-rich countries, whose customers turn their heads to low labour cost countries. On the other side of the globe, this trend creates opportunities for contract manufacturers and service industries.

From a historical and international perspective, we are witnessing a dramatic shift in the importance of the five main drivers for value adding: technology, production, marketing, logistics and support. From a historical and international perspective, technology –in the form of know how and trade secrets- has emerged as a key factor in this process.

In technology rich countries, there is a vast pool of know how waiting to be untapped. In emerging markets, there is an enormous demand for know how, waiting to be filled. This “trade in technology” could well be one of the answers to a changing world. But we need to improve the matching process for this trade i.e. through licensing. When it comes to transfer of know how and trade secrets which are hardly “patentable” –as is the case with most industrial know how- both parties, licensor and licensee alike, still seem to be reluctant to cross bridges. There is a role for institutions and governments to facilitate this matching process by improving the “climate” of intellectual property rights, particularly in know how and trade secrets.

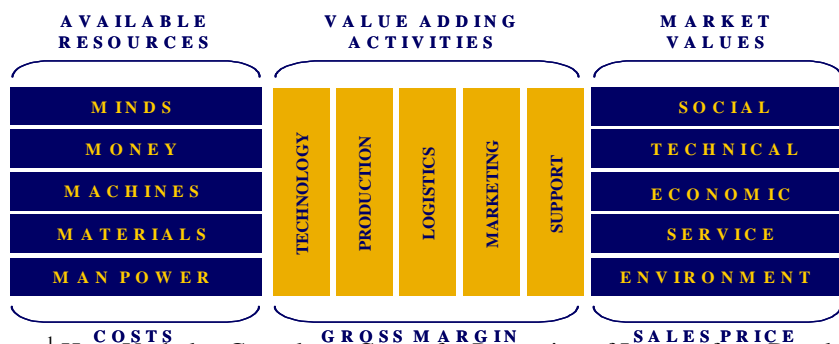
The Value Model

We buy a product because we think the benefits we derive from the product or service (*value*) exceed the sacrifices (*cost*) connected to the same. These benefits are called customer (or market) values; sacrifices are known as cost of ownership. Benefits can be of technical, economic, social,

environmental or service nature.

Cost of ownership is composed of price, time and conflict.

Particularly in trade between different cultures, doing business often creates conflicts as a result of



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misunderstanding in communication, different habits and business practices. In business to business transactions, if a company is successful in giving its customers more benefits than sacrifices, that company has added value to the customer's business. The greater the value, the higher the gross margin of the vendor company, either through higher prices or higher sales volumes. Based on its resources, a company can perform value adding activities: "Technology", "production" "marketing", "logistics" and "support".

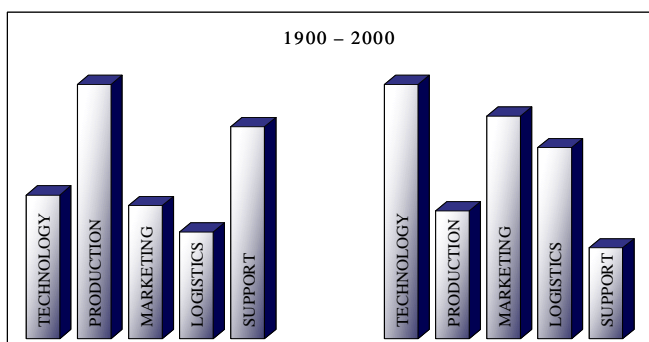
Changes from a Historical Perspective

From a historical perspective, the importance of technology has increased dramatically. Since the economic recovery after World War II, we distinguish four main trends: price, quality, speed and new, unique products.

- Directly after World War II, the increasing demand for all kind of products triggered producers to look for capacity. Increased competition forced them into cost effective production methods as well. But the quality of products suffered.

	MARKET DEMANDS	COMPANY EMPHASIS
1950-1970	PRICE	VOLUME AND EFFICIENCY
1965-1985	+ QUALITY	QUALITY ASSURANCE
1980-1995	+ SPEED	SUPPLY CHAIN MANAGEMENT
1990-.....	+ NEW, UNIQUE	INNOVATION MANAGEMENT

- This triggered the trend for quality products. All kind of quality assurance systems, many of them from Japanese origin, left their mark on the way companies were managed. It culminated into the widespread acceptance of the ISO 9000 quality assurance system, both in multinationals and SME's alike.
- Again from Japan came the "no-stock" philosophy, implemented by JIT (*just in time delivery*). It was a first warning that separating production sites from their direct markets required sophisticated logistics, better known as supply chain management.
- Once companies had completed the "price, quality, delivery" triple, they used their last resort in their quest for profits: creating demand for new products. "Shelf-life" for all kinds of products decreased, "improved" versions of existing products became the backbone for sales promotion.



Changes from an International Perspective

Other factors have influenced the importance of the five value adding

activities. From the two statistics², which give a relative comparison over the period 1900-2000, it is clear that technology and marketing have taken the role of production and support as main value activities³. The main drivers for their change in importance can be described as follows:

- *Technology*: that dramatic increase in importance due to the market demands we described in the previous paragraph was not the only reason. The relocation of production to low labour cost countries has confronted technology rich industries with an additional problem: protection of know how. It is widely accepted that direct foreign investments from industrial countries to developing countries have created a diffusion of technology into the recipient economies. Technology rich industries are mindful of the fact that without the existence of effective intellectual property system in the recipient countries the transferred technology may be used to compete against them thus denying them the opportunity for adequate returns to their investment/technology. Unfortunately, most potential technology recipient countries do not have strong intellectual property systems in place and as a result technology rich industries prefer to keep their R&D departments “close to the chest” and not move them along with their production units. This prevents the flow of technology through licensing.
- *Production*: at the dawn of industrialization, basic industries required huge investments in land, buildings, machines and labour. It is therefore logical that producers and manufacturers would receive the bulk of the total value added in the supply chain. But the increasing prosperity had its effect on labour costs, which constituted in most sectors between 50-70 % of the cost of production. Combined with the open border/trade liberalization policies of most developing countries this resulted in a wave of relocation of production activities towards low labour cost countries. This was most of all noticeable in the garments and -later on- in the electronics industry. Production as a value adding activity had deflated to a low level and –since it behaves like water- will continue to flow to the lowest point.
- *Marketing*: “You can buy a T-Ford in any colour you want, as long as it is black”. Henry Ford’s famous quote illustrates the role of marketing in the 20’s. It was a seller’s market and people would buy whatever industries would produce, such was the demand for new products. After some decades, producers started to understand the need for marketing as a value adding activity. Companies realized the importance of trademarks and industrial designs in marketing strategy e.g. General Motors would position similar cars (Buick, Chevrolet, Pontiac or Oldsmobile) for different market segments and command a different price for each of these brands. It is difficult to explain exactly why we are prepared to pay a premium for Nike⁴ sneakers over other less “marketed” sport shoes. Is it because of superior quality (production),

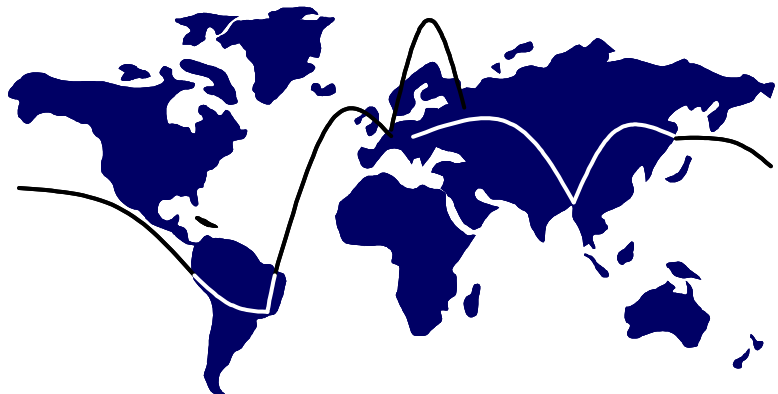
² “Verhulst, *Made in Argentina...Zimbabwe*”, 2001

³ When we talk about “value adding activities”, we refer to the value of those activities, i.e. the price a market or customer is prepared to pay for that activity, not the cost of that activity

⁴ Nike and the Nike-logo are registered trade marks of Nike, Inc.

design (technology) or the name/logo (marketing)? Is that same marketing the reason why we pay more for a PC with “Intel inside”? The fact is that the “marketing factor” plays a dominant role in the purchasing process, more than ever before. Seller’s markets have turned into buyer’s markets, competition is global and the battle for markets is influenced more than ever by advertising budgets.

- *Logistics:* production in the early part of the previous century would typically take place close to markets or close to the availability of raw materials. This reduced the need for sophisticated logistics. Globalization and consequent relocation of production have triggered transport of raw materials, intermediates and finished products. Plastic bags for a supermarket in Germany are made in Bangladesh with materials produced in Korea, which in turn are based on intermediates from South America. Those intermediates are produced with European plasticizers and solvents, based on Russian crude oil.



Around the world in 80 days: logistics from crude oil to plastic bag

Technology or Marketing?

Obviously, all industries now search for new added value in the technology and marketing “boxes”. The big money seems to be there. For manufacturers in developing countries, the choices are less obvious. Huge profits upwards in the supply chain -close to consumers and end- users are luring. But adding value through marketing means substantial investments in time and money. Investments in market research, market information, distribution channels, advertising, publicity and/or brand building. Another obstacle -certainly in B2B- is the customer himself. He is close to the end user markets or consumers and certainly does not want his supplier –the contract manufacturer- to compete with him on that same market.

From these perspectives it seems that both parties, - industries with technology and contract manufacturers alike- should opt for the technology route. For contract manufacturers it is the surest way to increase their added value and stay away from the downward spiral that affects all production activities. For technology rich industries, it could be a solution to the ever increasing problems around outsourcing and off-shoring. Cost advantage was and is the main driver for outsourcing, but both parties are having second thoughts about the benefits of outsourcing,

particularly in manufacturing. Lack of understanding of the technological needs to manufacture a product in a correct and cost effective way is the main culprit. Furthermore, limited use of intellectual property in facilitating technology transfer and in marketing strategy can be said to contribute to the reluctance of the two sides in “crossing bridges”.

Obstacles to Licensing

Transfer of know how and trade secrets is not restricted to “technical” know how. Know how in each of the value adding activities is “fit for transfer”. Production and logistical know how are the first choices when it comes to contract manufacturing.

Companies that want to increase their share in emerging markets may opt to transfer their marketing secrets and support know how to local companies in those markets in return for a royalty on sales volumes.

Unfortunately, the licensing instrument is underutilized by SMEs. For the bigger part, this is because licensors are afraid of uncertainties about the protection of their intellectual property, including trade secrets.. On the other hand, licensees are reluctant to accept the often severe restrictions that come with license agreements. These in turn are the result of licensors being overcautious to protect their interests. The vicious circle is completed.

Transfer of technology can be a remedy against the problems that proliferation of production and trade has brought along. But then again, a lot of work has to be done to make the licensing of know how and trade secrets more accessible for those who need it most.
