

Just In Time Systems and Euro-Japanese Industrial Cooperation

Malcolm Trevor

*Senior Fellow, Japanese Industrial Studies Programme,
Policy Studies Institute, London*

Just In Time (JIT) systems in the context of the relations between Japanese manufacturers in Europe and European suppliers of parts and materials have so far received little attention. Yet Japanese involvement in local production is having an impact on European companies in this area. Whether in co-operation or competition with Japanese companies, European firms can cut costs and increase competitiveness by applying integrated JIT systems to procurement, production and distribution, as manufacturers in Japan have shown.

Just In Time and Just In Case

Japanese manufacturing expertise is frequently held up as a model for European managers, especially those in companies that need to become more competitive. Japanese successes in such sectors as cars, electronics and machine tools are conspicuous in the European marketplace but it is not always so clear what European managers should do in order to achieve comparable results. There is a certain amount of (sometimes deliberate?) mystification, inertia and defeatism.

Even now too many European managers ascribe Japanese success to over-generalised explanations, such as docile workers, a workaholic attitude to life or the exploitation of Western technology. They underestimate the skill of Japanese managers in running production systems.

The first conference in the U.K. on JIT was not held

till 1986(1). Yet according to the management consultants A.T. Kearney, the annual cost to British companies of excessive inventory and of tying up precious capital in finance and storage is not less than £5 billion(2). Kearney also found that in some industries less than three per cent of full orders were delivered on time.

This appalling waste and slackness rests on a "just in case" philosophy. "Just in case" relies on large buffer stocks, large warehousing space, armies of warehousing and stock control personnel, numbers of forklift trucks to move materials around, maintenance men to repair forklift trucks etc. – and costly finance to keep a system going which is theoretically supposed to save money by reducing risk.

By contrast, the JIT concept is to deliver materials just before they are needed and to ship out finished products to meet immediate demand. By following this strategy, Japanese manufacturers have made considerable progress in rationalising the logistic chain between suppliers, producers and customers, and in gaining the corresponding benefits of cost reduction and greater competitiveness.

Japanese Criticise European Suppliers

Japanese applications of JIT should interest all European manufacturing managers: in particular those in companies that want to get contracts to supply Japanese production operations in Europe. This is a question of increasing importance as the

number of these operations is set to increase, given the pressures from the appreciation of the Yen and from protectionism and other factors(3).

Obviously JIT implies high standards of quality, as the delivery of parts that either require reworking or are unusable makes JIT production impossible. Indeed in Japan managers employ JIT not only to cut costs but to improve quality and to concentrate everyone's minds on the job and the need to fulfil all the conditions necessary to meet the schedule. How, then, do Japanese managers see European suppliers?

Already in 1977 the press reported that local suppliers faced "tough Japanese demands"(4). National Panasonic's managing director in the U.K. travelled 52,000 miles to visit 100 possible suppliers, before selecting 35. The policy of companies like Panasonic and Sony was to inspect every single high value electronic component received. At that time only 40 per cent of Sony's suppliers were British; the rest being Japanese or German.

A 1983 survey of 157 Japanese manufacturers in Europe found 40 who were worried about local suppliers. Many had returned defective goods and 44 wanted Japanese components makers to produce in Europe. The problems were quality, delivery and price(5).

The 1985 English language report of the Japan External Trade Organisation (JETRO) on Japanese manufacturing operations in Europe identified two main difficulties: local parts suppliers and local employee relations practices. In 1986 the Director Europe of the Electronic Industries Association of Japan described local suppliers' performance as "our biggest problem"(6). The consultants Arthur D. Little described many local suppliers as "uncooperative and unwilling to enter into long-term relationships". They also showed "reluctance to guarantee the extremely high quality and delivery standards that Japanese companies expect from their suppliers"(7). One British company, which improved quality and delivery in response to Japanese demands, "wondered what on earth had hit us"(8).

The Anglo-German-Japanese Exchange

Practical information on the improvement of quality by making all employees responsible is available from the authoritative Union of Japanese Scientists and Engineers (JUSE)(9). In fact QC is better known in Europe than JIT, even if it too has yet to be applied in many cases.

The first international conference on JIT in the context of Euro-Japanese industrial cooperation was organised by the Policy Studies Institute and the Institut der deutschen Wirtschaft, Cologne, and met in Cologne in September 1986(10). The conference was aimed at manufacturing management practitioners.

In his keynote speech, Mr S. Isaki, Deputy Director General of JETRO in Düsseldorf, referred to the differences in sub-contracting between Japan and Europe(11) and to the problems of Japanese manufacturers in Europe alluded to above. There was then a lively discussion in which Japanese managers and consultants took part.

The main sectors covered by the conference were electronics in which both the customer's side and the supplier's side were represented, and engineering.

In the U.K., Toshiba Consumer Products, which makes colour television sets at Plymouth, has moved towards a JIT approach in its relations with suppliers. After the establishment of the new company, the managing director held a suppliers' conference, attended by 150 representatives. Like its parent company in Japan, Toshiba seeks stable, long-term relations with suppliers and wants to work closely with them to solve production problems. Suppliers' conferences are now held periodically.

Toshiba's policy is that:

- Toshiba will not change its orders.
- Toshiba will pay its suppliers on time provided that parts are delivered on time.
- Toshiba will pay correctly if the parts received are of the correct quality.

As in Japan, Toshiba's policy is to have no goods inwards inspection for established suppliers: something which in Japan is taken for granted as the supplier's responsibility. To ensure quality, a ppm (parts per million) approach to reject rates has been adopted. The company makes it clear that a production stoppage due to parts problems is not acceptable.

Compared to the old 'just in case' mentality, the new approach may seem harsh but suppliers who perform well have benefited from becoming more competitive and have increased their orders from other sources as well. One new plastics company in Ireland, for instance, now does 90 per cent of its business with Japanese companies.

A German manager raised the question whether it was a good idea to change a number of suppliers every year, as was said to be the case in the German motor industry, in order to stimulate their performance. Toshiba's view was that this would be self-defeating,

since it would undermine the possibility of productive and mutually beneficial relations between suppliers and manufacturers. One reason why suppliers in Japan stay with their customers is the prospect of good long-term earnings: another is the transfer of technology from the customers. Some people describe this arrangement as uniquely Japanese but it is found, for instance, in the very special supplier/customer relationship between Marks and Spencer and its suppliers. "Supplying Marks and Spencer may be a treadmill but it's a lucrative one"(12). Unfortunately such relationships are less common in British industry, though there are moves in this direction and there is the stimulus provided by Japanese companies in the U.K., such as Nissan(13).

On the other side of the relationship, Mullard has made considerable efforts to meet the demands of Japanese customers in the U.K. and supplies them with electronic components and TV tubes. It has improved quality and delivery and has a liaison office in Tokyo staffed by Japanese nationals. Mullard is clear that, "There is no such thing as a standard Japanese company. As in Europe, each company has its own style"(14).

Mullard has produced company literature in Japanese and has trained staff to achieve higher targets. Mullard's parent company, Philips, has introduced the concept of "co-makership" into its supplier relations and has been gearing up with a new strategy to meet Japanese competition(15). In supplying European components to Japanese companies, where the products are designed is a crucial issue. Here it was felt that the progress of Japanese companies in locating design and development facilities in Europe has been 'disappointingly slow'.

The future of JIT in Europe

Companies that have introduced JIT systems include Bosch, Volkswagen, Renault, Rolls-Royce, Cummins Engines, and Lucas, who used "Competitiveness Achievement Plans" to spread the new philosophy throughout the company(16). Case studies have been published of JIT systems in Germany(17) and over a hundred German pilot projects achieved productivity increase of over 25 per cent in two to five years(18).

At the Cologne conference managers heard how JIT systems had successfully been introduced into the Stihl engineering company, a firm selling to 130 countries with 90 per cent of its turnover in export markets. In Herr Stihl's view, "Ever sharper competition forces us to produce and to deliver in a more market-oriented and order-oriented way".

The JIT system at Stihl creates a logistic chain between supplier, manufacturer and customer, following the integrated overall concept aimed at market-oriented production to meet immediate demand. It exemplifies the principles of JIT already outlined and specific points in the cases of Toshiba and Mullard. Reference was also made to Keiper-Recaro, who deliver seat fittings every 20 minutes in time with Daimler-Benz's assembly line: a clear case of the integration of supplier and assembler in the overall process.

JIT needs to be implemented in an integrated, not a piecemeal, manner. It is aided by electronic data transmission systems, which make it possible:

- To coordinate the flow of information and communication between procurement, production and distribution – in both directions – and
- To speed up the material flow, right through from procurement, via production, to the customer, ensuring that it fits in with production schedules.

By implementing an integrated JIT approach, the capability of the firm to deliver is brought into line with the demands of the market.

Herr Stihl saw the advantages, and consequently the financial savings, in:

- Faster implementation and reaction times both in the marketplace and in the company, and therefore greater flexibility.
- Faster flow of materials and assembly, and therefore less need for buffer stocks.
- Lower warehousing costs and the freeing of funds, thanks to reductions in inventory.

Representatives of British and German unions saw no particular difficulties with JIT, provided that the human factor was taken into proper consideration and that there was adequate consultation, training and opportunities for employee development.

All agreed that the Japanese challenge had provided a competitive stimulus to better company performance.

References

1. Ellis, W. "Reaping benefits 'just in time'", *Financial Times*, London, 2 April 1986.
2. Garnett, N. "The crippling cost of 'just in case'", *Financial Times*, London, 10 January 1986.
3. Trevor, M.H. (ed.), *The Internationalisation of Japanese Business. European and Japanese Perspectives*, Campus Verlag, Frankfurt, 1987.
4. "Suppliers face tough Japanese demands", *Financial Times*, 21 January 1977.
5. "Japanese criticise local suppliers", *Financial Times*, 28 September 1983.

6. Mr T. Negishi, Director, Europe, EIAJ in a personal communication. At the Sanyo TV plant in the UK in 1983 a board with the reject rates for 25 locally supplied components was prominently displayed.
7. Arthur D. Little Ltd., *A Report on the Japanese Experience in Wales*, Winvest, Cardiff, 1986.
8. "We wondered what on earth had hit us", *Financial Times*, London, 10 October 1983.
9. QC Circle Koryo. *General Principles of the QC Circle*, JUSE, Tokyo, 1980. *How to Operate QC Circle Activities*, JUSE, Tokyo, 1985. cf. Trevor, M.H. 'Quality control - learning from the Japanese', *Long Range Planning*, Pergamon, Oxford, Vol. 19, No. 4, 1986.
10. An edited volume of the proceedings, including the transcript of the discussion, is scheduled for publication in English and German in 1987. We would like to express our appreciation to the Anglo-German Foundation for the Study of Industrial Society who supported the conference.
11. See, for example, the case of the *Structure of the Japanese Motor Components Industry*, Dodwell, Tokyo, 1979.
12. "How they sold their soul to St. Michael", *Financial Times*, London, 19 June 1983.
13. "Few can meet stiff standards", *Financial Times*, London, 1 July 1986.
14. See note 10 above. Statistics on quality improvements in electronic components are included in the conference volume.
15. Turner, G. "Inside Europe's giant companies: cultural revolution at Philips", *Long Range Planning*, Pergamon, Oxford, Vol. 19, No. 4, 1986.
16. Van de Vliet, A. 'Lucas sees the light', *Management Today*, London, June 1986.
17. Wildeman, H. (ed.), *Just-in-Time. Produktion + Zulieferung*, 2 vols. University of Passau, 1986.
18. *Handelsblatt*, No. 167, 2 September 1986.