Science and Public Policy, volume 12, number 2, April 1985. Published by Beech Tree Publishing, 10 Watford Close, Guildford, Surrey GU1 2EP, England.

Third world co-operatives

Do workers' co-operatives innovate in the third world?

Ed Barbier and Nick Mahoney

Third world workers' co-operatives are heavily dependent on the industrialized nations for their technological innovations. They often have difficulty implementing them because of lack of management, marketing and financial skills.

Being run by the workers, the co-operatives' principal consideration is to provide security of employment. They can fall behind their private sector competitors because they are less willing to introduce labour saving technology.

In organizational innovation, the third world co-operatives are certainly ahead of the private firms in their own countries, and probably of co-operatives in the UK.

All businesses innovate. Workers' co-operatives in the third world are no exception to this. Innovation is intrinsic to their formation and survival.

Innovation is the commercial application of new ideas, devices, products, processes or systems of organisation. It can be seen as a process which begins in a firm with the conception or invention of new ideas. From the pool of new ideas, only some are selected, then developed and tested.

Finally some ideas go through to commercial application. After a new product, process or system is adopted, it often spreads through and across industries, markets and economies. This is often referred to as diffusion.

Enterprises in advanced industrialized countries are overwhelmingly pre-eminent in technological innovation. Technological innovation in the third world is largely dependent upon the international diffusion of new techniques. The adoption of new techniques by a firm in a third world country is, from its perspective, an innovation, but from a global viewpoint may be a part of the international process of diffusion.

Workers' co-operatives are businesses owned and controlled by their employees and they have developed in a number of third world countries. They can be found in service businesses, and in agriculture in some countries too. Here we are concerned only with industrial workers' co-operatives, which are probably the most common type to be found.

As third world businesses, workers' co-operatives are dependent on the diffusion process for technological ideas. Furthermore the objectives and skills that members have, may limit their adoption of new techniques.

However, in terms of organisational innovation, workers' co-operatives are far less dependent on ideas generated in advanced industrial countries. They have developed their own organizational structures, largely without models, in order to survive in their local environment.

In this paper we consider the processes of technological innovation and diffusion, first at a macro level, and then at the level of the firm. We explore the constraints, both external and internal, to which the co-operative firm is subject and which limit technical innovation.

We go on to argue, however, that as regards organizational innovation, the third world workers' co-operative is probably far more dynamic than most conventionally organized firms, and as dynamic as any workers' co-operative in the advanced industrial countries.

International diffusion of technology

At the global level, the private enterprise sector of advanced industrial countries (AICs), with some support from the scientific and technical services of the public sector, dominates the process of technological invention and innovation. This is reflected in AICs accounting for nearly all the world's research and development expenditures. Any third world firm seeking to innovate within its local market is essentially dependent on the diffusion of techniques from the AICs.

In the international transfer of technology to the Third World, the multinational corporation (MNC) originating in advanced economies acts as principal agent. As a result of this dependency, the technology diffused to the third world

Ed Barbier lectures in economics at Websters University, Geneva and is currently researching for a PhD on natural resource scarcity at Birkbeck College, London University, Malet Street, London WC1.

Nick Mahoney has been working with workers' co-operatives for many years in a number of countries. He is currently a consultant with Co-operative Advisory Group, 272 Pentonville Road, London N1, England.

Many of the examples in this paper are drawn from research conducted for the International Co-operative Alliance and funded by the Overseas Development Administration during 1977-79.[1]

 0302-3427/85/020067-5 US $3.00

is often not as appropriate for the resource requirements and limitations facing indigenous firms operating in less developed markets and economies. It may be particularly inappropriate for workers' co-operatives.

For example, the technology available from AICs can be capital intensive and labour saving in bias, requiring highly skilled, specific labour, and developed infrastructures and financial markets. Third world economies tend to have a surplus of unskilled labour and a shortage of physical capital, finance and skilled labour.

Third world economies also suffer from a highly imbalanced development of those resources they do possess. Thus industrial development tends to be concentrated in small but highly developed modern sectors that often have the only viable infrastructures of power, transport and communications for industry.

In recent decades, many MNCs have substantially adapted their technologies to allow increased use of the relatively unskilled surplus labour of third world countries. This has led to the development in these countries of a category of export-oriented, labour-intensive processing and component assembling industries that are either subsidiaries of, or sell directly to, MNCs.

The diverse pattern of industrial development in third world economies has yielded an equally diverse range of business enterprises, from subsidiaries of MNCs and joint venture partnerships, to wholly private, public and 'mixed' indigenous firms, to workers' co-operatives.

Labour-intensive sectors

Workers' co-operatives exist mainly in the labour-intensive consumer products sector of third world economies, but are far from being the most common form of industrial organization. Even in those countries where they are most developed they still represent only a small proportion of all co-operatives and contribute an even smaller share of overall GDP.

Workers' co-operatives are found in significant numbers only in those countries which by third world standards have a long history of industrialization. Like most industrial concerns in the third world, they are located in or near modern urban areas, relying principally on surplus low or unskilled labour, and serving local rather than overseas markets. They exist in small numbers or not at all in those countries whose economy is still largely agriculture-based and in the newly industrialized countries.

A third world industrial workers' co-operative, is a small business which typically employs labour-intensive techniques to produce low technology products for indigenous markets.

Even in these local markets, however, the smaller scale of workers' co-operatives and their relatively unadvanced technology place them on the 'competitive fringe' of the market. The market leaders tend to be the large-scale, more technologically sophisticated enterprises that may even be direct recipients of technology transferred from MNCs.

The smaller production capacity and specific technological requirements of third world workers' co-operatives limit their ability to receive and adapt technology diffused directly from AICs and thus place them at a competitive disadvantage vis-a-vis large-scale competitors.

Workers' co-operatives tend not to be the major technological innovators in the markets in which they operate, but to be among the last recipients of any relevant techniques diffused from AICs and adapted for economic conditions in the third world.

Innovation and objectives

Workers' co-operatives are businesses owned and controlled by their employees. In most third world countries, co-operatives are limited by share capital (unlike the common ownerships to be found in the UK) and their own capital comprises a mix of shareholders' funds, accumulated reserves, and temporary loans from members or undrawn wages.

They differ from the typical private company in that interest or dividend on invested capital is limited – generally to a rate well below the rate of inflation – and in that control is on a one member one vote basis rather than in proportion to shareholding.

The member of a workers' co-operative is both an employee and an investor. Members, therefore, are likely to look not simply for wages, dividends or interest, but for a return on their joint labour-capital input. It has been found that members often have a high propensity to invest in their co-operative.[2,3,4,5]

A likely explanation for this for co-operatives in the third world where employment opportunities for many are desparately few, is that capital is invested in order that the member can earn a wage.

The owner-investors in a workers' co-operative do not share the same objectives as the owner-investor in a private firm. They do not manage the business simply in order to achieve the standard business objectives of profit and security of investment. Principal objectives are generally security of employment, a high rate of return for all labour employed, and often 'social' objectives.

It is against these objectives, therefore, that any new innovation must be measured before implementation by a workers' co-operative.

In advanced economies, the process of innovation is an integral part of private-sector competition – competition that predominantly focuses on the marketing of new technologically based products or increasing market shares through the implementation of cost-reducing processes.

A new process may be adopted by a private firm if it offers the greatest potential for cost reduction by saving on the use of the factor that has the largest share in overall costs. In AICs today, this factor is usually labour.

The ultimate dependency of third world workers' co-operatives on new products and processes developed in accordance with private enterprise business objectives may present a difficult dilemma.

On the one hand, many of the innovations available to third world workers' co-operatives may be unacceptable or inappropraite to their objectives of employment security and high rates of return to labour. In particular, it would be difficult for workers to agree to a labour-saving innovation that offered greater profits and/or capital growth over the long-term but meant that in the short-term many workers would be made redundant.

Owner-investors in a workers' co-operative do not run the business simply to achieve profit, but principally to obtain security of employment.

On the other hand, the failure of a workers' co-operative to adopt a new product or technique that is widely available may place it at a disadvantage to the local competitor who, by virtue of being a private enterprise, may find the innovation more compatible with its own business objectives.

By adhering to its unique set of objectives, a third world co-operative may limit its ability to assimilate new techniques and products diffused from AICs. If it cannot take advantage of available innovations its long-term security and survival may be threatened.

Innovation and the membership

In general, workers' co-operatives in the third world do not make major technical or product innovations. They tend to derive their ideas for products, processes, and markets from the private sector in which many of their members have previously been employed. They are followers rather than leaders: their ideas are derived rather than internally generated.

There are three main reasons why this is so: the co-operatives lack technical, marketing, and financial skills.

The members of workers' co-operatives in the third world tend to be first or second generation migrants from the country to the industrial centres. Their technical skills are generally above those of the typical unskilled industrial worker, but below those of the skilled manual labourer who can find employment in the modern sector of the economy. Many have craft rather than industrial skills. Typically though they tend to lack commercial and business skills – their previous experience being that of shop-floor worker rather than management, sales or even administration.

Members tend to be educated to about average level for their country: they are educated to a level well above the average farmer for example, but below that which would allow them to obtain white collar employment.

They are generally people with some savings of their own, and they often maintain an interest in family agriculture (even when they live in the town) and do not come from landless families.

Market skills

To innovate does not simply mean having new ideas – it also means recognising the potential of new ideas when they come, and being able to develop them to the point at which they are commercially profitable. Innovation therefore depends as much on business skills as it does upon technical skills.

If a new idea is to be taken up by a business it has to be both technically sound and to have a commercial potential: it has to help to produce products which people will buy. To discriminate between the good and the bad idea, therefore, requires a clear understanding of the market for the product. It means being market orientated, knowing who the customers are, what their needs are, what they are going to be, and what the competition is up to.

Small businesses the world over are said to be deficient in the area of marketing. Workers' co-operatives, which draw their members largely from shop-floor workers, are particularly deficient. They tend not to attract the business person or the entrepreneur whose strengths are precisely in marketing rather than, or in addition to, production.

Without marketing information or a marketing perspective, workers' co-operatives are not in a position to judge the money-spinning idea from the potential flop.[6]

Financial skills

Innovation in terms of new product or new process will generally require new investment, therefore investment skills. Workers' co-operatives tend to rely on their own surplus for investment, so funds are limited. Many innovations are simply out of their range.

Where co-operatives have funds to invest, they do not always make the best use of them – they tie up disproportionate amounts in stock, or allow excessive credit to customers, for example. Overall they are not as efficient as they might be in achieving, the most productive use of the capital available.[7]

Innovations – even if only changes inspired by the example of local private sector firms – require financial and risk appraisal, and these are skills rarely found in workers' co-operatives.

An extreme example comes from a printing co-operative in Peru which wanted to modernise its equipment and buy an imported press to remain competitive with its private sector rivals. It was encouraged to purchase a German machine and was offered a government loan in order to do so.

The choice of machine itself, they felt afterwards, had been sound – they understood the productivity benefits it would bring. In their inexperience, however, they signed a contract to pay in instalments a price fixed in Deutschmarks. They had not recognised the effect which hyper-inflation in Peru would have had on the exchange rate by the time the later instalments became due. They ended up paying in local currency several times more than they had originally calculated. The co-operative survived this experience only by limiting wage rises and by curtailing expansion plans.

Technical skills

Relative to the private sector, the members of workers' co-operatives have better technical than either marketing or financial skills. In some cases these may even be sufficient to allow them to make innovative technological changes of their own. From the foregoing, however, it should be clear that successful technical innovation can only take place in an environment where marketing and financial skills co-exist with the technical.

A comparison of two Indian co-operatives both of which developed technical processes which were new to them show how technical skills on their own are not enough.

Both co-operatives were engaged in engineering in Ludhiana in the Punjab, a town with a long established engineering industry. The one, General Engineers Co-operative, was established by a group of moderately well skilled engineers with plenty of production and even some design experience, but little previous contact with business. The other, Shuttlemarkers Co-operative, was established by a group of brothers, some of them highly educated and with experience of running businesses of their own.

General Engineers wanted to develop their own products, but began by manufacturing screws and bolts which they found neither demanding nor very profitable. They moved on to assembling, with bought-in parts, diesel powered pumps for irrigation, which were very easy to sell at the time as large grants had been made available to farmers.

Their break came when they were asked if they could design and manufacture a drop-forging hammer for a local firm. They designed and built what was for them a new product from scratch but, after the sale, nobody else came up with an order for several years. In the meantime, they had to reduce the scale of their operations and revert to diesel pump assembly.

Shuttlemakers started assembling sewing machines, but their full-time sales staff found that there was a significant unmet demand for sewing machine shuttles. The co-operative moved into this area, where they faced much less severe competition. They recruited new employees and members with engineering experience and bought machinery to manufacture the shuttles.

As sales gradually increased, they not only took on more employees, but also found that they were able to make significant improvements in the production process by designing and building new equipment of their own. They constructed increasingly more specialised machinery and by breaking down the production process increased productivity significantly.

In the meantime, however, they kept up their selling effort with two full-time sales staff, so that there was almost always adequate demand for their increased output. After 15 years, they sold throughout India, and even found that they could cut back on their sales effort as repeat orders accounted for the greater part of their output and sales.

There were many differences between these two co-operatives, but both were clearly capable of limited technical innovation. Only one, though, was able to combine this with sustained growth.

It can be suggested that Shuttlemakers combined marketing with technical skills in a way that General Engineers did not. The former was able to develop its market while increasing productivity through changes in production techniques. The latter could develop a new product, but, with a passive approach to marketing, could not exploit this.

Western models

Workers' co-operatives in the third world have been on the receiving end of Western organizational models as well as Western technology. The models, however, have not been sufficiently powerful to preclude local innovation. In terms of organization development, it appears that third world workers' co-operatives have been largely self-reliant.

The basic principles of workers' co-operation – democratic control, limited interest on capital invested, the sharing of profits in proportion to work done – are common to all the enterprises considered here. They, and the legal framework in which they are generally embedded, provide only the starting point when it comes to practical organization. In most countries the law does not prescribe:

- how deep the management hierarchy should be, or even whether it should exist at all;
- how and whether key offices should be rotated;
- whether participation should be confined to the general meeting of members or whether it should be continuous;
- how power should or should not be shared between working and non-working members;
- how the co-operative should relate to the outside world – as a collective or through the medium of key individuals.

An Indian co-operative combined technical and marketing skills to make technological innovations work to improve its business prospects.

These are only a few examples of the issues identified as significant by most workers' co-operatives. In order for the co-operative to work at all, they have to be resolved.

In those countries where there are significant numbers of workers' co-operatives, they seem to be about average size for their industrial sector: co-operatives with 20–25 employees are common. Such enterprises have had to resolve the issues which arise when size demands a significant division of labour and the associated development of co-ordinatory functions, thus having to combine a management hierarchy with democratic control. In this respect, they have had to develop in organization terms beyond the vast majority of workers' co-operatives in the UK, for example, where the average size is less than 10.

Nowhere does co-operative law or model co-operative rules provide blueprints for industrial democracy. It is fair to say that despite all the interest in recent years in the subject, very few blueprints exist. The Mondragon workers' co-operatives have been held up as a model by some, but the organizational forms developed there have not yet been successfully replicated elsewhere, despite serious efforts.[8]

In the absence of appropriate models, workers' co-operatives have had to draw upon their own members' experience to create appropriate forms. The practical models used have been drawn from the members' home communities – which may be in the hostile environment of the shanty towns – and from the voluntary organizations which, for many migrants to the cities, are as important socially, politically and economically as are whatever formal structures of local government exist.

The typical organizational model, if such can be said to exist, is probably a shallow hierarchy of section co-ordinators answerable to a manager, who in turn is answerable to a committee. In smaller co-operatives the committee usually consists of all members, and in larger ones it is elected from a general meeting of all members.

In comparison with private firms, hierarchies are probably shallower, responsibility is devolved to a far greater extent, and the control function is spread across the membership rather than being concentrated in one person's hands. The manager's role in the co-operative is essentially that of co-ordinator. The forward planning function is often performed by the committee or by the general meeting.

Even within this basic framework, however, there are many variations. Some co-operatives may even experiment with several forms of organization, as the following example from Peru illustrates.

Cobblers' co-operative

Cobblers' co-operative was set up after a prolonged struggle between the employees and the owners of a moribund private firm employing about 50 people. The strike, and then the sit-in, brought the workers substantial support from their union, from the local community and, eventually, from the government, which had a policy of promoting workers' control in industry.[9]

Eventually, a co-operative was formed employing only a handful of people, but it grew gradually over six years until it had about 30 workers.

At the outset, the committee, made up largely of shop floor workers, decided that they would employ one of the managers from the private company as they recognised that they lacked the necessary business skills. After a while, however, it became clear to them that the manager was not effective and that he could not work with the new worker-owners. He was dismissed and a new manager recruited.

Still the business did not grow as rapidly as they had hoped, and neither the committee nor the manager could cope with problems of drunkenness and poor time-keeping which developed. The co-operative was reaching crisis point, and radical steps had to be taken.

A new committee was elected, and on to it were brought a number of shop floor workers who had not been central to the original, tightly organized group which had struggled to get the co-operative going. The chairperson of the new committee was a young woman employed as an office worker.

In many respects, she might have been seen as a surprising choice. She was a woman in a co-operative in which all positions previously had been filled by men, and she was young in a culture which generally respects age and experience. In all probability, however, the very fact that she was not a central member gave her the freedom to make sweeping changes, backed up by the authority of her position in the committee.

She sacked the manager, and she tightened up on internal controls and discipline at work. During her term of office, Cobblers' co-operative developed a system of business control and day-to-day management by the chairperson and the management committee.

At the next annual general meeting, a new committee was elected, but this time the members were drawn once again from the ranks of the original key workers. During their period of office, while business continued to improve gradually, a highly centralized system of decision taking and control developed from which the ordinary members felt they were excluded. The tension between ordinary members and the committee came to a head when it was revealed that the committee had lost the co-operative a significant amount of money on the purchase of a shop, which had been bought without general consultation.

At the following annual general meeting, the management committee was entirely replaced. It was decided formally that nobody could serve more than one term in office, and that as many members as were willing and able would be given a chance to serve on the committee over time. Under this system, the chairperson was taken off production and was expected to act as manager.

The co-operative members felt that their system had several major disadvantages. In particular, shop floor workers had a lot to learn in a short time if they were to be effective as managers; then, after one year, a new person had to start again. They argued, however, that they had a very experienced general membership able to participate with increasing effectiveness as a consequence. They felt that their customers and suppliers found it difficult to deal with a new manager every year. In turn, the new manager had to work extremely hard to regain the confidence of customers and suppliers.

Overall, though, they felt that there was no going back. To employ an experienced manager gave them little control over the business and they did not believe that they could find a competent person who could work effectively in a democratic business. To appoint one of their own members as manager led to a concentration of power in one person's hands and they were committed to a high level of participation. Moreover, they wanted the business and organizational skills to be spread throughout the membership.

This example shows how the members developed innovatory solutions to common organizational problems in workers' co-operatives. They had no previous experience and minimal contact with similar enterprises. With experience, they combined elementary technology with organisational sophistication.

Conclusions

Workers' co-operatives in the third world are innovatory, but operate under such constraints that organizational innovation is more readily undertaken than technological.

Technological innovation is held back by the conditions of the global dependency of third world firms, both large and small, on the research and development process in advanced industrialised countries. It may well be, though, that workers' co-operatives, with their objectives of maximizing member employment and the security of labour, are slower to take up technological innovations than are their private sector competitors. It may be the case, also, that the members of workers' co-operatives do not always have the business skills which are the pre-requisities of most commercially successful innovations.

If workers' co-operatives are to compete more effectively they will have to cultivate and develop such skills among their members or else recruit people who already possess them. Many co-operatives are suspicious of the commerically experienced but outside managers, often unwilling to accept their attitudes and the strictly hierarchical managerial structure that they would want to introduce.

What gives grounds for optimism is that there are many indications that third world workers' co-operatives are highly innovative in terms of their own organization. They are more so than the private sector firms with which they compete directly, and probably than most workers' co-operatives in advanced industrialized countries.

Workers' co-operatives are not going to overcome the basic conditions of dependency, which affect all third world firms, and become major technological innovators in the world economy. However, with their commitment to labour rather than capital, and their ability to bring about organizational innovations, they may well be able to develop and accommodate the necessary business skills that will at least make them more competitive in their immediate environment.

References

1. P Abell and N Mahoney, *The economic and social potential of industrial co-operatives in developing countries*, (London, International Co-operative Alliance, 1980).
2. P Abell and N Mahoney, see reference 1.
3. D Jones and J Svejnar (eds), "The performance of small-scale industrial producer co-operatives in developing countries: capital starvation and capital management", *The economic performance of participatory self-managed firms*, (Lexinginton, 1983).
4. H Thomas and C T Logan, *Mondragon: an economic analysis*, (Allen & Unwin, 1982).
5. Vanek by contrast has developed a strong theoretical argument that in the long run member investment is unlikely to occur. See J Vanek, *The general theory of labour-managed market economies*, (Cornell University Press, 1970).
6. This point could probably be made for workers' co-operatives in the UK too; see Co-operative Advisory Group, *Marketing in worker co-operatives in the United Kingdom*, (London, 1984).
7. P Abell and N Mahoney, see reference 1.
8. R Oakeshott, *The case for workers' co-ops*, (London, Routledge and Kegan Paul, 1978).
9. N Mahoney, *Industrial development during the Peruvian revolution*, (Open University, 1983).