

**Manufacturing Strategy**  
**Professor. Rajat Agrawal**  
**Department of Management Studies**  
**Indian Institute of Technology, Roorkee**

**Module No. #05**  
**Lecture No. #22**  
**Enlightened View of Manufacturing**

Welcome, friends. Now, we have understood, that what are the generic type of output, for the Manufacturing Strategy. In our earlier sessions, we discuss the process of, developing the Manufacturing Strategy. And, we also discussed, the output of Manufacturing Strategy. Output in the form of, some generic classification, for the Manufacturing Strategy. If you recall, in our last session, we discuss the classification, given by Roth and Miller, that three generic type of, strategic organisations, are possible. Caretakers, Marketeers, and Innovators.

Now, once we understand, the basic idea, basic philosophy, of these three types of organisations, then probably, for the practical purpose, we should be able to use, a combination of these, generic strategies. I strongly recommended, that marketeer, and innovator, type of clubbing, is the most suitable type of strategy, in the current circumstances, where, markets are highly dynamic, markets are turbulent, changing daily, and therefore, you have to have, a market-oriented.

And, at the same time, the rate of change is so rapid, that if you are not able to fulfil, if you are not able to give those products, on a faster rate, you will not be able to win the competition. So, that providing products, at the faster rate, come from your innovator strategy, and understanding the markets, on a regular basis, comes from the, marketeer type of strategy.

And therefore, the combination of these two, is the most ideal one. Now, in this particular session, we will see, that how, the manufacturing has evolved, from its traditional view, to the strategic view. We are, since last twenty-one sessions, talking about, the strategic role of manufacturing. That, strategic role is about, providing some kind of help, some kind of input, in development of the corporate strategy of the organisation.

Now, in this particular session, we will be discussing, that what is those strategic inputs, which manufacturing can provide. So, we call them, enlightened view of manufacturing. And,

let us see, a comparative analysis, of traditional view, and the enlightened view, or the strategic view, of the manufacturing, for various key activities.

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Key areas	Traditional belief	Enlightened view
① Manufacturing's importance per se	Local economic concern only	Of national importance
② Production/ operations' role within corporate strategy	Fringe after all the corporate debate has taken place	Central to the corporate debate
③ Production/ operations' involvement and image	Tactical and reactive	Strategic and proactive
④ Production/ operations' role in the company	Essentially cost-cutting	Competitive weapon in factors such as <u>delivery</u> , <u>flexibility</u> , <u>quality</u> , <u>design</u> and <u>capability</u>

*Handwritten notes on the slide:*  
 - Red circles around 'Fringe' and 'Essentially cost-cutting'.  
 - Red arrows labeled 'Stage I' and 'Stage IV' pointing from 'Fringe' to 'Strategic and proactive'.  
 - Red text 'Houses of Wheeling' written across the bottom of the table.

So, our discussion, is divided, in these three parts. The first part is, what are the important issues, on which, we will see, what is the traditional view, and what is the enlightened view, or the strategic view, how manufacturing can provide, some kind of strategic advantage, with respect to these key areas. Now, if we start this discussion, the first important thing is, manufacturing's important per se. How manufacturing is important? Or, how far, manufacturing is important?

Now, the traditional view is about, development of local economy. Wherever manufacturing will be, it will help, in the development of the local economy. Now, you need not to go very far. After independence, when in 1947, the problem of economic development, or the equal economic development of India came, so our leaders, at that time thought, that developing manufacturing facilities, in different corners of the country, will help, the local economic development.

And, as per that idea, public sector enterprises, were established, in different corners of the country. So, to that extent, that idea was very brilliant. Lot of public sector enterprises, came in different corners of the country. And, those PSU's provided, local economic benefit. Those PSU's helped, in the economic development of those regions. But, now, the enlightened view says, that manufacturing is not important only for the local level, but it is a very important national activity.

And therefore, if you see, the present day of leadership, they talk of, make in India. Because, they know, that manufacturing is not going to serve, only the local purpose, but it is also going to serve, the national economy. And, we continuously target, that how you can increase the share of manufacturing, in the overall GDP of the country. So, from local economic concern, to national importance, that is the first level of transition, which happens, with respect to, importance of manufacturing.

The second area is, production operations role, within corporate strategy. Within corporate strategy, what is the role of, production and operation function. The traditional view says, it was just at the fringe. The role of production and operation was, just at the fringe, after all the debate, at the corporate level, has taken place. You just tell, you just inform, the production people, operation people, that what is to be done. So, they were, almost non-existent, in the part of, or in the corporate level, strategic debates.

But, nowadays, we are moving into the direction, where production operations role, in the corporate level strategy, is almost centre. And, if we are able to achieve, this central role, for the operation or production, in the corporate level debates, that is actually the Manufacturing Strategy, that how you can increase, the role of operation activities, in the corporate level debate. So, that is, as a fringe activity, to the central activity. That is another major shift, which is going to happen, if we are able to do, all these exercise, which we discussed, in our last many sessions.

The third important activity, third important key area, is related to, production operations involvement, and its image, the perception. Now, the involvement and image, was tactical and reactive, in the conventional organisations. As we just discussed, that corporate level strategies, corporate level debates, took place. And, those output of corporate level debates, were informed to the production operation people. And, they were at the fringe. And, they had to adjust, according to those decisions.

Therefore, I am saying that, the involvement and image, were tactical and reactive in nature. But nowadays, we are moving, to this strategic and proactive role of manufacturing, that when you are central to the corporate level debate. So, you are not part of technical, you are part of strategic level activity, in the organisation. And, you are not reactive, you are not

responding, to the decisions taken by the corporate level debate. Rather, you are proactive, you are contributing, in taking those decisions.

So, that is a major shift, from the traditional view, to the contemporary view, to the strategic view, or to the enlightened view of manufacturing. That, earlier, we were reactive, and now, we are going to be proactive, with respect to, involvement and image of operations. And, the whole debate, which, if you remember, we discussed from, Hayes and Wheelwright. In that, Hayes and Wheelwright, they were saying, that organisations are, internally supportive, and they have to be, externally proactive. And, that is the meaning from, reactive to proactive.

That, we need to move, from Stage-I, to Stage-IV, type of organisation, as per Hayes and Wheelwright framework. Where, in India particularly, many organisations, are still in the Stage-I type of activity. And, as we discussed, in our last session, most of these Stage-I organisations are nothing, but the caretaker type of organisations.

In our, different sessions, we are giving, different names. But, if you try to link them, you will find that, whether I talk, Stage-I type of organisation from the, Hayes and Wheelwright classification, or, if I talk of, caretaker type of organisations, from the Roth and Miller classification, they are almost similar.

They are not developing, any competency. They are remaining, just, as it is. And therefore, they always remain, in a reactive mode. And, their perception, their image, is also not to provide, any strategic advantage. And nowadays, when we are going to have, marketeer or innovator type of organisations, or a combination of these two, we become Stage-IV type of organisation, as per Hayes and Wheelwright.

So, that is a major shift, we are expecting, from the involvement and image point of view. Then, another key area is, production and operations role, in the company. Now, whenever you talk of production operations role, we talk in terms of, cost cutting. All other activities, all other order winners, we feel, are being provided by, other functional areas. But, the cost cutting, is the operations responsibility. So, traditionally, the role of operation is only limited, to cost cutting. The whole efforts, were directed toward, cost cutting.

And, even the idea of quality, which got developed, in Japan. And, that idea of quality is also aiming towards, cost cutting. Because, they gave a very broader view of quality, which is not just quality conformance, but reducing waste. And, the idea of reducing waste, was also in line, to achieve low cost. Because, when you are reducing waste, you talk of, cost of quality, how to minimise the cost of quality, all those things, were targeting towards low cost.

So, the role of operation, people always considered, though this is the value adding activity in the organisation, but the focus shifted from, value addition, to cost cutting. How to add more value, nobody discussed about that? People started discussing. And, all through in our literature, all through in our practices, with respect to, role of operation in the organisation, the focus was only on, cost cutting. So, that was the only order winner or qualifier, we were expecting from operation.

But, nowadays, in our enlightened view, in our strategic view, we consider, that cost cutting is only one part, of operation. It is, in fact, used as a competitive weapon, for delivery flexibility, quality, design, capabilities. So, there are many more things, which organisations can achieve, by using operations, appropriately. So, the role is much wider. And, we had a very narrow vision, of operations role, that it is only limited to, cost cutting.

Rather, it can provide you delivery flexibility, it can provide you better quality, it can provide you different types of designs, it can provide you different types of capabilities. So, we need to have, all those things, we were highly underestimating, the operations function, in our organisation. Then, another key area is, market requirements.

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Key areas	Traditional belief	Enlightened view ✓
Market requirements	Static and known and , therefore manufacturing's role is east to determine <i>Caretaker</i>	Volatile and changing, therefore needing high-level business skills from production, operations and not just their technical input
Product development	Driven by the marketing department <i>Cross functional</i>	Involves a holistic effort including production at early stages of development <i>Concurrent Engg.</i>

Now, market requirements, is related to, in our traditional way, that market requirement is very, very static. And, as organisation, I know those market requirements. So, this was the belief. And, how to provide those market requirements, how to do those market requirements, that was the idea of, traditional view of marketing, traditional view of operations. Because, these things were, static, and known.

So, there was, no specific requirement coming, to operation. And, how to easily determine, and just provide, those static requirements, to the market. So, that was the traditional role. And, therefore, most of our ancient organisations, not so ancient, but organisations developed in, 60's, 70's, 80's, were caretaker type of organisations, where the idea of marketeering and innovation, was very limited, because of this aspect of, static and known.

But, nowadays, what is happening, that markets have moved, from static and known, to turbulent and changing. Markets are becoming, turbulent. They are changing. The requirements are changing. In our many sessions earlier, we have discussed that, Order Winners and Qualifiers, are market and time dependent. And, that is the meaning, that market requirements are changing, market requirements are turbulent.

And therefore, we require skills, from production, operation, and all these other functional activities, that they do not provide, only the technical inputs, but also help us, in supporting these changing requirements. So, technical inputs were related, to provide the low-cost. But, if different types of requirements, are coming from the market, so how my functional areas, how this operation area, can help me, in providing those changing requirements, of the market.

So, that is, if we are able to do that, that is the strategic view of the manufacturing. Then, another important thing is, product development. Or, in some literature, you may also find this word, new product development. Now, in this new product development, this was earlier, in the traditional way, was considered the responsibility of the marketing department. So, this was marketing departments responsibility. And therefore, the very idea of saying, operation as reactive activity, because the product development was taking place, by the marketing department.

And, the marketing used to give that specification, to the operation people, to manufacture that product, to produce that product. So therefore, we used to say that, operation is a marketing driven activity. Because, new product development was resting with the, marketing department. But, in the strategic view, in the enlightened view, when we say that, the development of Manufacturing Strategy also starts, from the analysing of the market, for understanding the market.

So, we also try to understand, what is the requirement of the market. And, that requirement of market will help us, in developing the new product. So now, we have a holistic effort, where the team members, from operation and production, they also got involved, in the new product development activity, from a very early stage. And, the idea like, concurrent engineering, is just to develop, cross functional teams.

So, nowadays, in new product development, we have cross functional teams. The earlier way of developing new product, was resting with the marketing department only. But, now, the cross functional team, where people from finance, people from marketing, people from operations, people from after sales services, from all these different functional activities, sit together, and they try to evolve, the product.

So, now in the current way of developing the product, the production operations people, provide very, very important strategic input, what are the strength of operations people, these are told, at a very early stage, to the marketing people, so that, the specifications can be developed, so that, you can launch those products, you can commercialise those products, at an early date. If, you develop a very good design, but you are not able to manufacture.

And, if you want to manufacture, it requires, lot of time to develop those capabilities, may be by that time, the market demands, further change. So, there will not be any point of, that type of design development. So, we therefore are favouring, things like concurrent engineering, development of cross functional teams, so that, right from the beginning, we have people, those who understand a holistic vision, of the product development. So, that is another important change, which is happening from our conventional view, to the enlightened view.

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Key areas	Traditional belief	Enlightened view
Process technology	A means of reducing labour	To be used alongside labour
Front-line production personnel's role	Repetitive, narrow tasks; low level skill with little or no training	Multiskilled, a variety of roles, highly skilled, trained personnel to support the company in the market.
Remuneration for front line production personnel	Wages based on piece-work and day-rate schemes	Salary 'reward' according to skill, output quality, pay for knowledge with profit sharing and stock ownership possibilities

Then, another important key-areas are, with respect to, process technology. Now, process technology, earlier was considered, that it is simply a means, to reduce the labour efforts. How to reduce the efforts, in an organisation, that was the purpose of, process? That, what type of processes, what type of machines, you are using? Now, in our current way of understanding, the process technology, we see, that we need to develop, a balance, a harmony, between machine and men.

So, machine alone is not sufficient, men alone is not sufficient. How to optimally use, a combination of, men and machine. If, you are doing a routine kind of job, that can be very well done by robots. So, let us use robots, for those type of things. But, where we need a very skilful activity, which is to be done by humans, that will be done by humans only. So, how to use, your automated system, with manpower, that is a very important crucial thing, which is happening nowadays.

So, if you see, an assembly line, in any manufacturing sector, you will see that, robots are working continuously, in the assembly line. Because, they do, repetitively same type of work. But, if you go to an operation theatre, and where the job is very unique, you will find, doctors, personnel's are working, in an operation theatre. So, that is the enlightened view, that how to use, both these, automation, robots, and manpower, in our organisations.

Now, another key area is that, what is the role of production people, who are involved, in the frontline activities? The one, who are supervising, at the shop floor area? Who are my works manager? What is their role, in this whole process? Now, in our conventional way, we used to

see that, their roles are more like, repetitive in nature. They keep doing same thing, in all the shifts. And, they are given, very narrow task. So, one is, repetitive narrow task.

And, since they do repetitive and narrow task, so low level of skill is required, and not much training provided to them. So, in fact, they were not part of our, human resource development activities. But, nowadays, even the frontline executives, are supposed to have, multi-skilled. They need to have, variety of roles. And, we have concepts like, human resource, and work excellence. So, for that purpose, job rotation, job enrichment, those type of things, are becoming popular.

Because, achieving these objectives, of Manufacturing Strategy, and then finally, becoming a world class manufacturing organisation, is not possible, without proper human resource management. So, human resource management also became, a very important part of our strategic thinking, in our current organisations. Then, another key area, is the remuneration. How much wages, you need to give, for your frontline production personnel's, supervisors, works managers, labour, etcetera?

So, the idea came from, the developers of scientific management. So, the developer of scientific management persons like, FW Taylor, they proposed, that the wages should be based on, piecework. The work, you do accordingly, you will be paid. So, that was the idea of FW Taylor, piece way system. And, that traditional view was continued. But, now in our contemporary view, we say that, salary is a reward, according to your skills, not according to your work.

The kind of skills, you possess, salary should be given, according to that. And, it is the duty of your seniors, that we should be able to take work, according to your skills. So, it is my fault, it is my poor organisation, that if I am not able to take work, as per your potential, as per your capabilities. But, that should not hinder, that should not lower down, your wages. Your wages will be, as per your skills.

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Key areas	Traditional belief	Enlightened view
Alliances with other companies	R & D developments to share costs, often with hidden , secret agendas on both sides	<u>Long term alliances</u> <u>developing joint products</u> and process improvements including technology and improving other competitive factor such as delivery, costs, product quality, design and flexibility

Then, another key area is, alliances with other companies. Because, when you are in a business, you are not alone. You have Suppliers, on one side. You have customers, on the other. So, you need to have, alliances with these, Suppliers and customers. Now, earlier thought, was limited, to share the cost of research and development. Whatever, research and development I am doing, at my organisation, I will like to share that cost, with my Suppliers, and with my customers.

And, we used to have, some kind of trust deficits. I always used to have, some kind of hidden agenda, which I was keeping secret, with my Suppliers, as well as, with my customers. So, that was the traditional view, that I will not be giving them, complete business secrets. So, trust deficit, was a very important component, in the traditional way.

But, nowadays, in the enlightened view of manufacturing, we need to have, a very strong, a very long term, committed alliances, with our partners, with our Suppliers, with our customers, then only, we can get success, in the market. So, we need to have, this long-term association. And, this long-term association, if we have, so we say that, this is the strategic Supplier Buyer relationship.

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Key areas	Traditional belief	Enlightened view
Buyer-supplier relationship	Often distant and cost factors still dominate	Long term and committed from both sides so that both parties win as part of the overall strategy in gaining market presence. JVs are mutually beneficial and go beyond just costs to other factors such as delivery speed and reliability, product quality and new designs.

So, the next key area is that, Supplier Buyer relationship. That, Supplier Buyer relationship, earlier, was only limited, to the cost related factors. That, whoever is going to give me, the lowest possible cost, they will be my Suppliers. So, that was the original idea, of Supplier Buyer relationship. But nowadays, there are many things, which are happening in the market. Dynamism is there, in the market. We need, very fast product development.

And, if we only look for, low-cost kind of Suppliers, we may not be able to achieve, these other capabilities. For that purpose, we need to have, committed and long-term Supplier Buyer relationship, so that, my Suppliers understand, my philosophy of doing the business, and they will able to respond, as per my expectations. At what time, I will be introducing a new product? What time, I will be having, new components desire from you?

And, if my Suppliers are not giving me, that type of support, I will hardly be able to achieve, any kind of strategic objective, set for my organisation. So, Supplier Buyer relationship is nowadays, a very, very crucial thing. And, many organisations, focus a lot, on their Vendor development. Vendor development is one key aspect, in achieving Just-in-Time, Total Quality Management, Kanban, and many other Japanese philosophies, related to manufacturing excellence, are only possible, when you have, a good Supplier Buyer relationship.

So, these many key areas, we discussed. And, we saw that, how things are changing, from the traditional view, to the strategic view, or to the enlightened view. And, this will give us, a good idea in black and white, that with respect to these things, if I want to take the advantage of manufacturing, as a competitive weapon, what type of decision making, or what type of

my thought process, should be. So, with this, we come to end of this session. Thank you, very much.