

Organising the Unorganised Sector: An ICT Enabled Logistics Model in Favour of Cottage and Small Scale Industries in Northeast India.

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Northeast India is a geographically land-locked, covered ninety nine percent of its boundary by foreign countries. Thus in spite of being blessed with a high potential for development of resource-based and demand-based industries in the region, the pace of industrialisation in Northeast had not been satisfactory. Village and cottage industry in Northeast India constitutes an important part in the economy of this region. As we all know that in a thickly populated country like India, Village and Cottage industry is one of the dominating contributors for GDP and thus this industrially backward region of the country can also largely contribute to the country's GDP growth through properly leveraging the existing cottage and village industries. Emphasis should also be given for promoting development and establishment of new cottage industries, thereby removing the regional economic imbalances and contributing all other benefits. But leverage and development of the industry can only be acquired through diminishing the problems and issues arising out of sickness in this industry. Here in this paper an attempt has been made to give a suggestive business model which may support and enable to remove the industries' core issues for sickness starting from sourcing of raw materials to delivery of finished products. The model described in the paper is based on information communication technology and supply chain logistics management and their impact on cottage industries' product value chain. The paper also highlights about the organising and integration of unorganised cottage industries.

Keywords: Cottage Industry, Information Communication Technology, Supply chain, logistics

Introduction

India's North-eastern Region consists of eight states, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura, occupying 262,179 square kilometres and with a population of 39 million (2001 census). Most accounts and discussions about the Northeast point out its diversity in people, plants, and animal life. The region is rich in natural resources, especially water and forests, and there is a feeling that it could potentially be one of the wealthiest regions of India (World Bank, 2008). Troubled by history and geo-politics, the North East has remained one of the most backward regions of the country. The trauma of partition in 1947 not only took the region backwards by at least a quarter of a century, but also placed hurdles

on future economic progress. It isolated the region, sealed both land and sea routes for commerce and trade, and severed access to traditional markets and the gateway to the East and South-East Asia (MDONER). The Partition of India in 1947 created havoc for the North East. It became virtually landlocked, surrounded by inhospitable neighbours. Even with mainland India, the link was only 22 km through the tenuous Siliguri corridor as against the 4,500 km long international border. Traditional transportation routes - rail, road and river, linking the Chittagong and Calcutta ports, suddenly became unavailable and alternative routes were prohibitively costly. To cite an example, the distance between Agartala and Calcutta port is 1,700 km, whereas, earlier, it was just about 375 km

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through Bangladesh. Such was the economics. The result, therefore, was massive market disruption, which North East still suffers (Madhav,J). Thus in spite of being blessed with a high potential for development of resource-based and demand-based industries in the region, the pace of industrialisation in Northeast had not been satisfactory. Instances of the early industrialisation in northeast dates back before partition of 1947, with the setting up of Tea industry in Assam during the British era and later with the discovery of OIL by the United states, the British started for searching oil in Upper Assam part of the North eastern India and they found oil which resulted in setting up of oil refineries in those places.

In north eastern states, the agriculture is underdeveloped and subsistence in nature, low industrialization of the region and under development of basic infrastructure has compelled the rural population to take up some economic activities based on their natural/ traditional skill. Das & Das (2011). In North Eastern Region of India, thousands of small households industries are operating in rural areas. These are all traditional households industries and operating by some communities and caste Das & Das (2011).

Before Independence, the present small scale industry was meant to denote the village and the urban cottage industry. This group included a variety of industries ranging from manufacturing of Iron safes, locks, carpets, marble jigs, baskets, hand-loom cloth and the like. In fact, at that time the term 'cottage and Small scale industries' was used in juxtaposition to large scale industries, which were established under the British patronage Sindhukumar (2010). Later on post independence we saw number of policies and support provided by the Government. However all these policy initiative by the central as well as the state government could not bring smile to the faces of artisan and households businesses of NER. The policies that have been taken till date for the development of small households industries in the rural areas could not touch

the real sector Das & Das (2011).

Cottage and Small scale Industries of Northeast India an overview

Cottage and small-scale industrial sector plays a dominant role in the economic development of both developed and developing countries. Small Scale, Household, Cottage Industries are those industries which are mostly labour pooling industry, caste and community based. These industries are basically run from the owner's house employing themselves or the family members and are based on locally available resources, less machinery and limited capital. The definition of cottage and small industries went on changing from time to time. According to the Fiscal Commission (1949-50) "cottage industry is an industry which is run either as whole- time or part-time occupation with the full or partial help of the members of the family". According to the Economic Commission "cottage industries are those industries which are run fully or partially with the help of family members". According to the Micro, Small and Medium Enterprises (MSME) Development Act of 2006, (India) a micro enterprise is where the investment in plant and machinery does not exceed twenty five lakh rupees. A small enterprise is where the investment in plant and machinery is more than twenty five lakh rupees but does not exceed five crore rupees.

In both developed and developing countries cottage, village and small industries play an important role as regards to economic development. Those countries which were once developing, the industrialisation grew up around large number of cottage industries and later on as they transformed to developed countries those cottage and village industries still existed

which contributed a huge part towards equitable distribution of national income, GDP growth, employment generation and removing regional imbalances. Indian economy is underdeveloped and Northeast India being a underdeveloped part of

underdeveloped nation, its vast resources are either unutilized or underutilized. A major section of man power is lying idle. The per-capita income is low. Capital is shy and scarce and investment is lean. In this situation of low capital and high human capital, the only answer for betterment of this region is the development and revival of the cottage, village and small industries. Choice naturally has to be biased towards techniques making use of capital-saving or labour-intensive techniques.

In North East India thousands of small and rural households industries are operating among village communities and different caste. These industries are based on local resources and traditional skills available with the rural people of NE (e.g. cane and bamboo, pottery industry, silk cloth making, brass metal and Bell metal, Terracotta etc) Das & Das (2011).

If we consider arts and crafts of Northeast, starting with Arunachal Pradesh, the principal industries are forest based. Forest products, especially bamboo, are vital resources. Saw mills, plywood and veneering mills, rice mills, fruit preservation units, soap and candle manufacturing, steel fabrication, oil expellers are in the medium and small industrial sectors. Weaving is the universal craft, highly coloured fabrics being made largely by women. The multi coloured masks, fine wood-carving, cane, bamboo and fibre works bear eloquent testimony to the fine artistic temperament of the people. There is a steady export market for Monpa carpets, Adi skirts and Mishmi bags and shawls with a view to develop the traditional handicrafts of the people. The government has established a number of Cottage Industries, Training-cum-production centres, where local boys and girls are trained in various crafts to enable them to earn their livelihood by practicing these crafts. The craft centres are also helping the people in finding markets for their products. Assam was traditionally famous for its cottage industry, especially spinning and weaving. Pat or pure silk production is essentially confined to Assam. Assam produces about 10% of total

natural silk of India. Assam also produces Muga, the golden silk. Assam is also the main producer of Eri or Endi. Weaving is an important cottage industry of Assam. It is a traditional industry which can be traced back to very ancient times. There are about 7,00,000 looms in Assam, where majority are primitive foot looms. Only some looms of Sualkuchi, used for commercial production of silk cloth, are powered. Bell-metal work is a traditional cottage industry of Assam.

The products made of bell-metal are traditional plates, cups, tumblers, pitchers, bowls, sarais (a tray with a stand), dwarf pitchers, pots, hookahs and musical instruments. Brass-work is also an important traditional handicraft of Assam. Brass articles are produced not only for day-to-day use, but also for interior decoration. The total production of marketable finished goods annually is about 300 tonnes. In Manipur, the weaving industry is well developed and each household owns a loom with the women busy in the creation of typically unique native designs. The handloom industry is the largest cottage industry in Manipur, with the finished items often been exported. In Meghalaya there are cottage industries like weaving, cotton ginning, spice making, bamboo and cane works, tailoring and knitting. Cottage industry and other small-scale industries play important roles in Mizoram's economy. There has not been any significant industrial development in the state due to lack of raw materials. But there is scope of industrial development from forests products. Thrust areas for cottage industrial development in Mizoram are Bamboo, Food processing, Hand looms & handicrafts. The age old industry of Nagaland is cottage industry which plays a vital role in the village's economy. Cottage industries which deserve emphasis are, weaving and dyeing, work in cane, and, work in wood, black smithy, pottery and excavation of salt, pulp and paper mill. Handloom is the single largest industrial sector in Tripura and in terms of employment potential; it is next only to agriculture. Almost one-fifth of the total population is either partially or wholly depended on this sector. From the time immemorial, Tripura is

known as a little place almost religiously devote to finest experiments in art and crafts. Here, the nimble finger of artisans with their glorious chisel played wonders through the ages. From simple materials like cane bamboo and wood, innumerable objects of magnificent beauty are carved out every day, which are in use right from cosmetic table to elegant drawing rooms, from ordinary wall decoration to the more sophisticated field of interior decoration. Some of the popular products of handicrafts are room divider, Cane furniture, Table lamps, Ashtray, Panely scroll etc. The Central and State governments are, from time to time, facilitating the promotion, development and enhancing the competitiveness of micro, small and medium enterprises. By way of development of skill in the employees, management and entrepreneurs, provisioning for technological up-gradation, providing marketing assistance or infrastructure facilities and cluster development of such enterprises with a view to strengthening backward and forward linkages.

Common Sickness in Cottage and Small Industries

Although the heritage of small and cottage industries in Northeast India is very rich but these industries are handicapped with innumerable difficulties. Ignorance, illiteracy and conservative attitudes of the people connected with these industries are standing in the way of modernisation and expansion of cottage and village industries, dearth of capital, dearth of institutional financing, lack of training facilities, competition with large scale industries, old and traditional means of production etc. Among the main problems to be cited in the paper is the problem of marketing of the cottage industry products, high cost of sourcing of raw materials and thereby increase in cost of production. As described in the 'cottage and village industry report' of the planning commission of India, the marketing problems of village and cottage industries arise from two sources: First, exploitation by middlemen in their traditional markets and second, lack of a marketing organisation which

will allow them to penetrate new markets. It is assumed that cottage and village industries cater to the demands of the local market only but quality goods also have country wide attractions. The artisans sell their product to either local clients or in the nearby hut or by hawking system. The option for catering to the urban market is through established traders and to the distant market whosoever wishes to do is through commissioned agents or the middle men. The skilled artisans cannot hold the stock of goods to exploit the festive markets or any other exploitable situations. Because of dearth of capital he has to sell the products as and when he produces in whatever return he receives. Artisan cooperative, KVIC, The Handloom Corporations etc are some organizations supporting marketing for the products but these organizations depend very much on mutual trust and honesty in the community and their success depends on good management but these conditions are rarely fulfilled. There is a need of institutional arrangements or departmental support, so that the artisan may get a better return.

Scarcity of raw materials is next major problem faced by cottage and small scale industries. Whatever raw material they get is of poor quality and higher price. The cottage and village industries require raw materials both from local and distant geographic location. But as we all know that village and cottage industries are scattered, unorganised and behave as a small units of production compared to the large scale ones ,as a result their bargaining power is too low. The demand for raw material of an individual unit is small, even on the basis of an annual demand. The cottage and small sector has to deal with the retail dealer for its requirements and cannot take advantage of the low price seasonal purchases; whereas the large sector cannot only get its raw materials at wholesale prices, but being a large-consumer, can demand still more favourable rates from the trade and get it.

The artisans have to pay more for the purchase of the

raw materials in competition to those from organised groups. Also because of weak financial capability of the artisans, they cannot purchase bulk quantity of raw materials at the time when prices are low. For some or the other reason, if the artisans fails to sell a bulk quantity of product, he is not in a position to purchase raw materials. Their comes the role of middle man money lenders who tries to exploit the artisans in every sense by purchasing low cost raw materials and selling at high cost to the artisans. In view of the predominance of middlemen in the raw material markets, the artisans find it almost impossible to purchase the raw materials straight from the growers. And on the other side the growers of raw materials are also debtors of the middle man and are obliged to sell their produce to them. Thus in the both directions the middle man captures the cream of profit.

These problems result in high cost of production. Thus a simple product produced from the cottage industry will cost much higher than the same product produced by the large scale sector. And here comes the consumer behaviour of choosing substitute product at lower price than the cottage products. Say for example, if an artisan wants to make an eco-friendly bamboo-cane bodied pen. With his traditional means of production and old machineries he can at best produce 10 pens in a day. These leads to low demand of raw materials from the artisans and problems thereon as cited earlier in this article , again due to high price of raw material, his cost of production per pen will rise up to that extent that the customers will better opt for a low cost substitute plastic ball point pen.

Need of the Hour

Though lots of policies, framework, and institutions came forward from the side of the government, yet these could not bring smiles on the faces of artisans and cottage industry owners. Thus organizing the unorganised sector and evolving specific means to tackle the problems of cottage and village industries is the crying need of the hour.

Objective

The purpose of this study is to present a suggestive business model which may support and enable to remove the industries' core issues for sickness starting from sourcing of raw materials to delivery of finished products. The model described in the paper is based on information communication technology and supply chain logistics management. The paper also highlights about the organising and integration of unorganised cottage industries.

Methodology

The study is based on a descriptive approach to describe how information communication technology and supply chain logistics management can support the cottage and small industries. As such all information is secondary, achieved through studies of relevant Literature primarily the websites on cottage industries and supply chain management.

Defining Logistics and Supply Chain Management

The Supply Chain Council (1997) uses the definition: "The supply chain - a term increasingly used by logistics professionals-encompasses every effort involved in producing and delivering a final product, from the supplier's supplier to the customer's customer. Four basic processes-plan, source, make, deliver-broadly define these efforts, which include managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customer." Supply chain is a network of manufacturers and service providers that work together to convert and move goods from the raw materials stage through to the end-user. These manufacturers and service providers are linked together through physical flows, information flows and monetary flows Bozarth (2006). Lummus & Vokurka (1999) provides a summary definition of the supply chain as: all the activities involved in delivering a product from raw material through to

the customer including sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, delivery to the customer, and the information systems necessary to monitor all of these activities. Supply chain management coordinates and integrates all of these activities into a seamless process. It links all of the partners in the chain including departments within an organization and the external partners including suppliers, carriers, third-party companies, and information systems providers.

Supply Chain Management is the design and management of seamless, value added processes across organizational boundaries to meet the real needs of the end customers Fawcett (2008). Supply chain management consists of developing a strategy to organize, control and motivate the resources involved in the flow of services and materials within the supply

chain Krajewski (2007). As defined by Ellram & Copper (1993), supply chain management is "an integrating philosophy to manage the total flow of a distribution channel from supplier to ultimate customer". Logistics management and supply chain management are to a large extent overlapping. Logistics is the process of strategically managing the procurement movement and storage of materials, parts and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that current and future profitability are maximized through the cost-effective fulfilment of orders. According to the Council of Logistics Management "the process of planning, implementing and controlling efficient, effective flow and storage of goods, services and related information from point of origin to point of consumption for the purpose of conforming to customer requirements" can be considered as logistics management.

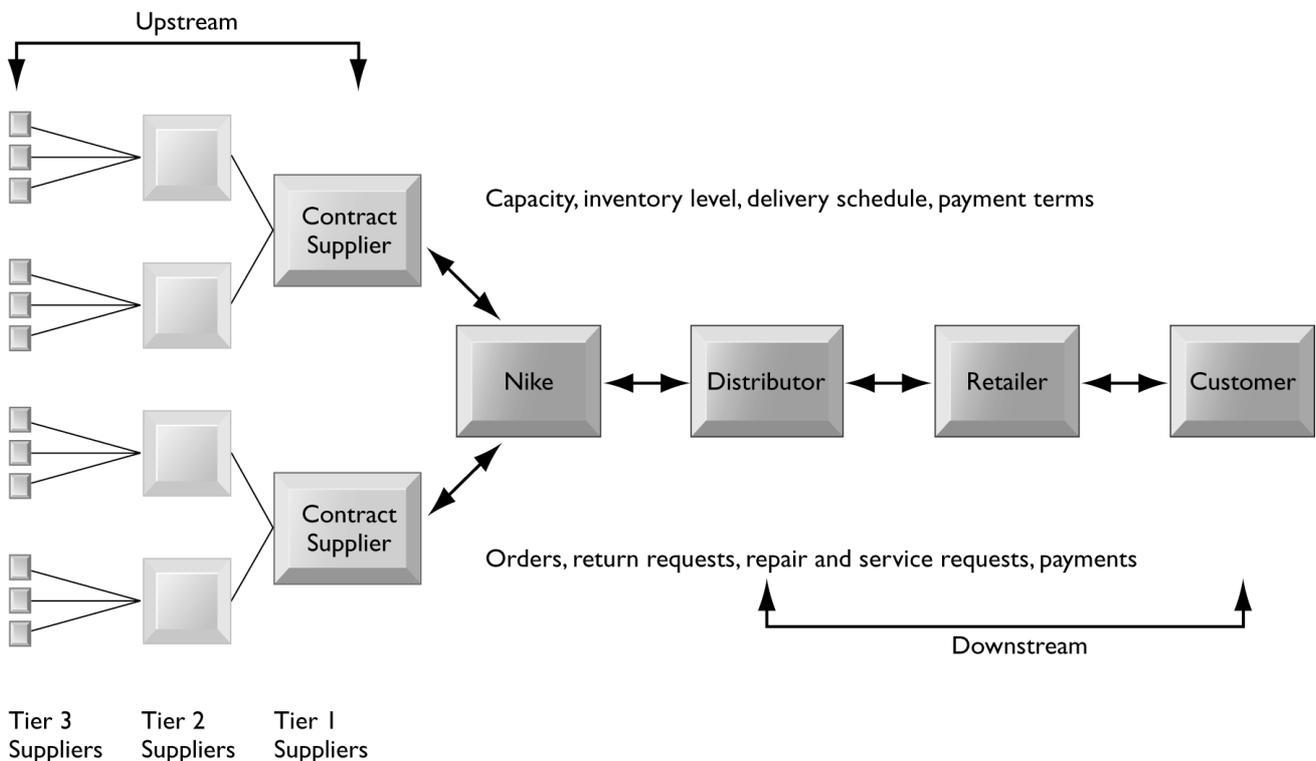


Fig 7.1: Nike Supply chain. Source: Laudon and laudon, "Managing the digital firm" (2007)

The figure 7.1 explains a simple illustration for Nike's supply chain for sneakers where there is a flow of raw materials upstream through tier 1, tier 2, tier 3 suppliers and ultimately reach Nike and then the manufactured products travel downstream from Nike to distributors, retailers and finally end customers. Nike's contract manufacturers are its primary suppliers, the suppliers of soles, eyelets, uppers and laces are the secondary (Tier 2) suppliers and suppliers to these suppliers are tertiary (Tier 3) suppliers.

The ICT Enabled Supply Chain Logistics Model for Cottage and Small Industries

Cottage and small industries are illiterate as regards to overall management theories and practices and their practical applications. Here according to the model, the unorganised cottage industries will act only as the workers and manufacturers and rest functions of management like planning, directing, controlling and organising everything are being done by a third party. The third party may be either from Government side or private organisation who will implement the model. This third party organisation is responsible for managerial activities like raw material sourcing, Marketing and promotion of the products, delivery of finished products to end customers and all the supply chain and logistics management of the flow of materials and goods both upward and downward the supply chain. The third party is also responsible for market analysis,

demand analysis, forecasting, planning and controlling operations, materials management etc. The third party will keep their profit margin giving due profit to the cottage industries.

If we consider the large geographical area of Northeast India, there can be two types of third party. First, there will be Regional centres located in different regions of the area and second, a Hub Situated at centrally located place in the area.

Regional Centres: These centres will be located at different regions. The criteria for selection of Regional centres may be on the basis of division of the geographical area, state capitals, large towns and cities in the region and also on the basis of cottage industry clusters. The regional centres will be in direct touch with the cottage industries.

The Hub : The hub is responsible for all the managerial activities and analysis like market analysis, demand analysis, forecasting, planning and controlling operations, materials management etc. And apart from these, Hub will perform all the activities same as the regional centres but Hub will be in direct touch with the Regional centres.

The model is like a tree structure whose Trunk is the hub, branches are the regional centres, and leaves are the cottage industries.

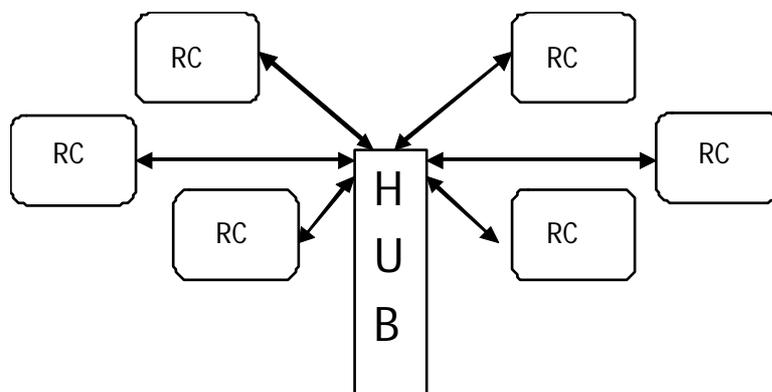


Fig 8.1: The ICT enabled supply chain logistics model for Cottage and Small Industries

Source: Author

RC: regional centres

Represents flow of information, goods and raw materials

Now let us break the Figure 8.1 into a single Regional centre (RC) to find out what exactly happens in the regional centres.

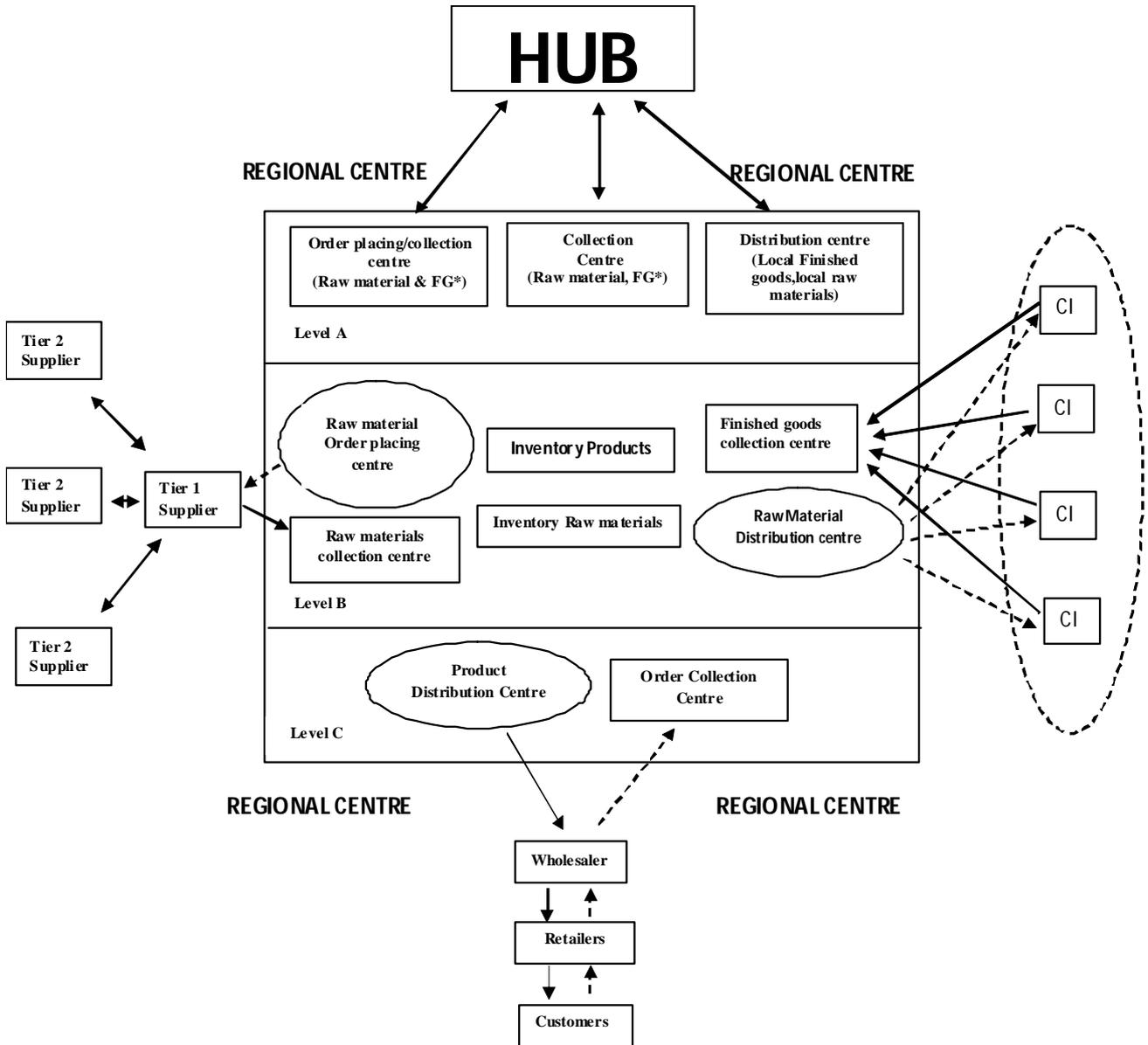


Figure 8.2: Regional centre in the ICT enabled supply chain logistics model for Cottage and Small Industries

Source : Author

CI represents the unorganised cottage industries

FG* represents the finished goods from other regional centres

According to the model, figure 8.2, a regional centre connected to a Hub has three levels of activities, Level A, B and C. Regional centre are connected to the Hub, the suppliers, the wholesalers and the cottage industries.

For better understanding let us assume that the HUB is located at Guwahati in the Northeast and regional centres spread across the region in smaller cities and state capitals Shillong, Agartala, Aizawl, Itanagar, Imphal, Kohima, Silchar, Dibrugarh, Dhubri etc.

Level A describes the activities of three different centres involved. Order placing and collection centre, places order to the Hub for those raw materials which are not available locally but required for the cottage industries in that locality. It also places order for finished goods stored in Hub's inventory for sale in its region. This centre also collects order given by the Hub for finished goods from cottage industry of that locality to be distributed to other regions. Collection centre collects raw materials from the Hub for the orders that were placed and also collects finished goods of other regional centre via Hub. The distribution centre distributes or transports the locally available raw materials to the Hub for use in other regional centre cottage industries and also transports the local finished products to the Hub for sale in other regions in accordance with the order collected from the Hub earlier by order collection centre.

Level B has four centres, starting with Raw material order placing centre which places order for raw materials to the local suppliers and the raw material collection centre collects these raw materials as per the order placed. These raw materials collected are transferred to the local cottage industries with the help of raw materials distribution centre and also transferred to the other regional centres through Distribution centre of Level A. The Finished goods collection centre collects the end products from the local cottage industries and transfer it to the Distribution centre in Level A for sale in other regional centre via Hub and also transferred desired number of finished goods to the Product distribution centre in Level C.

Level C is composed of two centre where the Product distribution centre distributes the finished goods both from other regional centre and local finished goods to the wholesalers. Order collection centre collects the order of products and pass it to the desired centres.

The wholesalers accordingly pass the different products to retailer and ultimately to end customers. The unorganised cottage industries act as an integrated

cluster and the regional centre and remain dependent on the regional centre for both raw materials and delivery of finished products. Inventory of finished goods and raw materials will be stored respectively in Inventory products and Inventory raw materials. (Fig. on next page)

In figure 8.3, Level A of the Hub works quite similar but reverse to a regional centre. Level A describes the activities of three different centres involved. Order placing and collection centre, places order to the regional centre for the raw materials of that particular region or locality which are required for the cottage industries in other region. This centre also places order for finished goods from the regional centre. The Hub at the same time collects order from the regional centres for other raw materials and finished goods that are stored in inventory. The collection centre collects raw material and finished goods from the regional centres. And the distribution centre transports the specific raw material and specific finished products to specific regional centre as per order made.

Level B of the Hub works with two centre viz. Order placing centre and raw material collection centre specially meant for those special supplies which cannot be fed by regional centres. The hub remains connected to these suppliers for supply of materials and store it in Inventory of raw materials and from there it will be distributed to other regions by distributing centre of level A. The inventory raw material present in the Hub will stock different raw materials coming from different regional centres and also from direct suppliers. The inventory products will keep stock of all the finished products from different regional centre. All the distribution centres in the Hub will be fed with raw materials and products from these "inventory raw materials" and "inventory products".

Level C in Hub is different from Level C in the regional centre. In regional centre level c have Product distribution centre and order collection centre

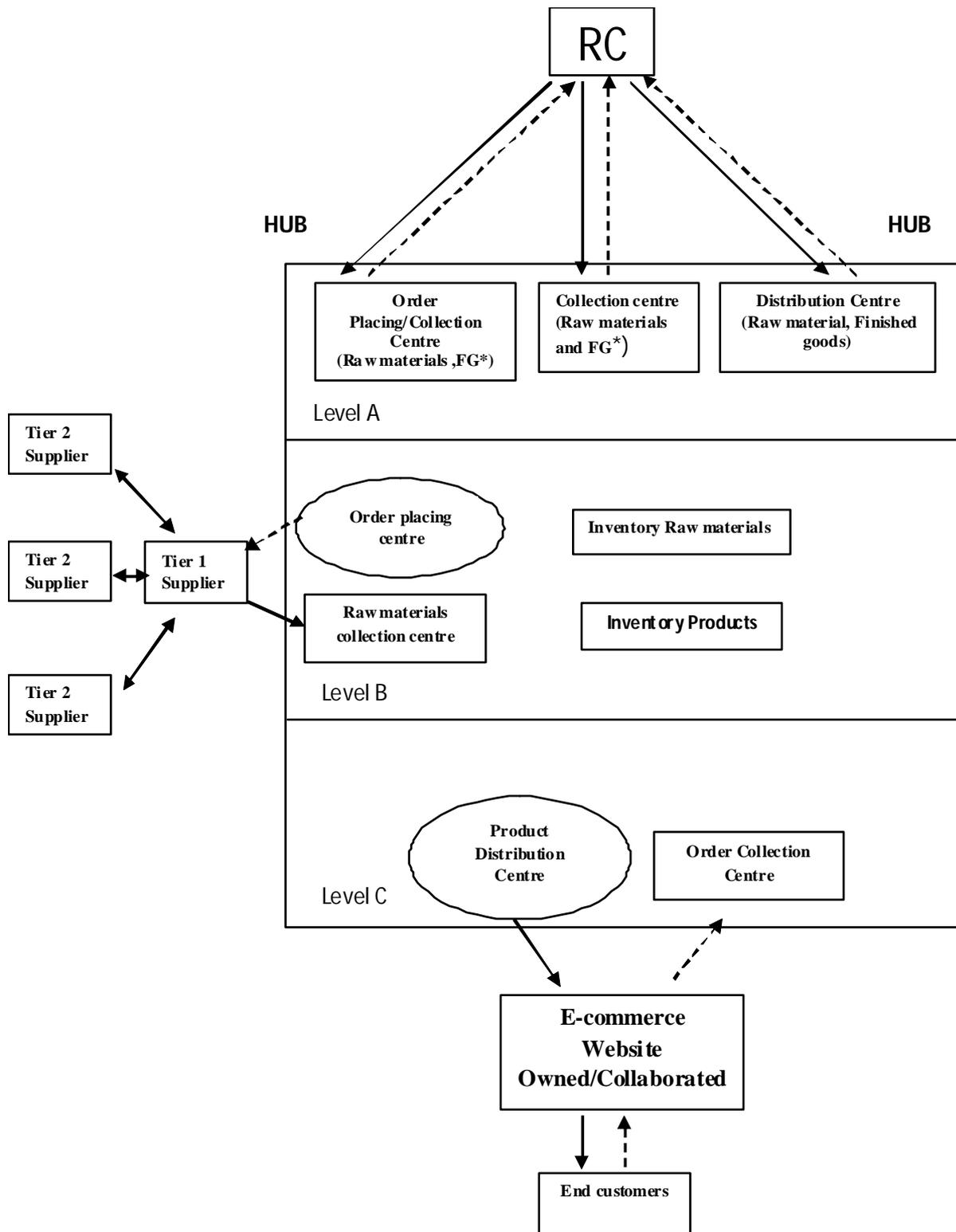


Figure 8.3: A HUB in the ICT enabled supply chain logistics model for Cottage and Small Industries

Source : Author

RC represents regional centres spread across the region.
 FG* represents finished goods

specifically meant for wholesalers, but in the case of Hub, there is an introduction of an e-commerce website which will serve as a e-market place for customers across the country or globe. This e-commerce website will enable a good promotion of the cottage industry products across boundaries and region, where the customers can directly purchase from home being online and order will be delivered to their specific address. This e-commerce website may work exactly similar to other existing websites like Homeshop18.com or ebay.com. There are two choices either the Hub can collaborate with any one of the e-commerce website or build an e-commerce website on its own. The only fact is that customers will order via online to the website and Website Company will pass this information to the Hub. The hub at the same time will deliver the finished products to the website company in accordance with the orders and the website company will deliver the product to end customers.

Conclusive Discussion and Further scope of Research

As we are aware that region which is not blessed with large-scale industries, cottage and small industries can take the role for economic development. Thus if a region really wants to develop economically, cannot neglect these industries. The study is only theoretical and its practical application is yet to be tested. The model described in the paper is at a very initial stage of literary work and hence lots of improvements and modifications are welcome. There is a large scope of further study and research on the following model and area. Though the sickness in this industry is not only related with sourcing of materials and marketing of the products but also related with some other major factors. The model if implemented will have lots of benefits to the cottage industries by avoiding middle men money lenders and middle men sellers, who always exploit the artisans. It will also benefit by providing smooth delivery of products to the customers and better customer, supplier intimacy and all other benefits reviving from the sickness in the industry.

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