

**SUPPLY CHAIN DYNAMICS, AGILITY
AND RELATIONSHIP MANAGEMENT:
BSS 421**



**WEEK TWO :CRAFT AND MASS
PRODUCTION
BY**

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RECAP OF LAST WEEK'S TOPIC



We discussed on

1. Major trends causing supply chain dynamics
2. Causes of organization failure
3. Sources of organizational competitiveness
4. **Note** : Emphasis on globalization, ICT and customer awareness as a major source of dynamics
 - Customers get to know of products in other parts of World.

Task for Last week's Topic



1. What type of organization do you work or hope to work for?
2. What does the organization do?
3. What is the state of how operations are done i.e how are the inputs converted to outputs that customers want?
4. What would you do better if you were in charge of the operations?
5. What new operations opportunities that are available for your organization?
6. How are supply chains aligned to cope with trends and challenges that organizations are facing?

Possible Solutions to our last week's Task



1. **Type of organization** ; Public, private , NGO, Not for profit, Third sector Alliance, Self-employed.
2. **What does the organization do?** Product or service
3. **How inputs are converted to outputs;** Depends whether tangible or intangible product .
4. **What would you do better if you were in charge of the operations?** It is very challenging to change a system.
5. **Operations opportunities that are available for your organization?** Could be new technology, new customer etc.
6. **Trends and challenges facing your organization:**
Competitor, new business line etc.

What Dynamic Did you Experience over the week?



For me , It rained heavily in my country on the night of Sunday 22rd March 2024 and dynamic that occurred;

- I. The internet signals failed and communication was simply impossible.
- II. Cars in my estate usually parked outside were cleaned by rain. So car washers had non or little income for that day
- III. The vegetable vendor could not go to the market and I did not get groceries. Can you see how supply chains slowed?

Objectives of the Topic Two



1. Distinguish between craft and mass production from craft and mass approaches to business
2. Describe characteristics of craft production and its current status
3. Describe characteristics of mass production and its current status.

Craft Production: Introduction



1. Development of craft production can be understood from geographical perspectives.
2. With reference to Britain , It is the oldest form of production that started way before the industrial revolution. (before 1770s)
3. People lived in small agricultural base communities and produced other things that they needed mainly.
4. Earlier Civilizations such in China, India and middle East had craft production.
5. Craft Production exists today in various parts of the world.

Craft Production Cont'd



Evidence of existence of craft production

1. Okokwo (2017) pg 134-135 , Documents existence of craft production in Nigeria to date.
2. Winkel (2008) explains the development of craft industry in Europe *pg 430-433*
3. Pilot Projects and Provincial Craft Master Plan (2004), provides a report on the study on artisan craft development plan for rural industrialization in the socialist republic of Vietnam
4. Alexandria et al. (2017), Pg 28-30 , however shows that craft production is on the decline.

Craft Production Cont'd



References

1. Okonkwo, I.M, (2017). The product categories, challenges and prospects of handicraft production in Nigeria, African Journal of Arts and Humanities Vol. 3. (5) 133-157
2. Winkel. C , (2008) . Craft Production encyclopedia in today's Business. Sage Washing ton DC.

Craft Production Cont'd



References,

3. Alexandra , C. B. Salguerob ,J. Peraltac , M.E. Aguayoc , F. Aresd a Rua , E. Velha da Ajuda, (2017) .
Spain New design and manufacturing technologies for craft products, Manufacturing Engineering Society International Conference ,2017 p 2351-9789

4.Trade and Commerce in the Medieval World (2020)

Indira Gandhi National Open University, New Delhi

<http://egyankosh.ac.in//handle/123456789/66546>

Nature of Craft Production



1. Wenkel (2008) pg 429 : Defines craft production has any work done by a skilled worker not only to make a commodity but also for the sake of it.
2. This theme runs through literature of craft production showing that although goods were needed, craft run in certain families or a group that had learnt how to do something.
3. Crafts men/women were bound by prestige and respect for the kind of craft that they produced.

Craft Production Cont'd



4. This situation holds even today. Wenkel (2008) pg 430-433 further explains that Post – industrial revolution of the craft production separated the skillful crafts men and artists .

Among the crafts men, some changed to the newer forms of production, others remained with the craft production while the artists were left as individuals to serve high profile clients.

5. Learning took place through apprenticeship on average 7yrs.

Nature of Craft Production Cont'd



Broad categories of goods produced under craft production includes-;

1. Embroidery and Woven products,
2. hand Textiles and Hand-loomed Products,
3. Ceramics and Pottery,
4. Leather and Leather Products,
5. Wood products,
6. Jewellery and Jewellery Products etc.

(References have
broad categories of products)

Characteristics of Craft Production



1. One person was responsible a for making a product.
2. Simple tools were used hence it took a long time to make a product or to complete the job.
3. Craftsmen were very skilled and they produced goods of very good quality.
4. Goods were produced according to the customer's specification.

Disadvantages of a craft Production



1. Production of goods was very slow because of using of simple tools.
2. The quantity produced was limited because of using manual labour.
3. Production was costly because craftsmen were very skilled and they fitted the parts of a product according to the customer's specification.

They also charge more because of long lead times.

Disadvantages of a craft Production Cont'd



4. When goods fail the replacement is hard because of making according to customer specification.
5. Production costs do not decrease with increase in production because the crafts men do not enjoy economies of scale.

Disadvantages of a craft Production Cont'd



6. Due to lack of economies of scale, craft production cannot expand to a large form of business.

7. It is not possible to standardize goods because there are many small producers producing goods to specifications. The number of producers (crafts people) is so large hence it is impossible to monitor compliance. Winkel, (2008) pg 132: Okokwo (2017) pg 140.

Challenges of Craft Production in Africa



Craft production is predominant in Africa and it faces unique challenges. Okokwo (2017) identifies

1. Lack of adequate infrastructure: inaccessible road networks, transport bottlenecks, lack of or unreliable power supply and lack of proper workshops and storage facilities.
2. Lack of formal producer groupings or cooperatives: Artisans are scattered and work individually in unstructured production systems, rather than in organised groups. This makes it difficult to reach out to them with support programs and inputs.
3. Limited commercialization of craft production activity.

Challenges of Craft Production in Africa

Cont'd



4. Lack of market intelligence : Most producers are ignorant of the seasonality and trendiness of demand of the handicrafts.
5. Middle persons in the distribution channel make the product expensive especially in export market.
6. Low technical know-how: Results in poor design skills, specialization, inconsistent product standardization, poor finishing etc.
8. Poor packaging
9. Lack of credit
10. Low Value Addition etc.

Craft Production and Supply Chain Dynamics



1. Technology has led to mechanization of some aspects of craft production though uniqueness can be lost.
2. Though learning is through apprenticeship learning takes a shorter time. It is not predominant for people who have not gone to school.
3. Learned people organize a group and teach them craft production. Technical and Vocational institutions are wide spread in Africa.
4. Globalization has influenced craft production and it is not in its pure format.

Craft Production and supply chain Dynamics Cont'd



5. Digital technologies has revolutionized certain aspects of craft production. Artists can produce their work, market and sell easily. (Digital phones and social Media).

6. Supply chains are short Supplier → Buyer These are even shorter technologies

Impact of Craft Production on Supply Chains



1. Effective competitor with supply chains of larger manufacturers. Some level of large scale manufacturing is possible. E.g. tailoring of school uniforms.
2. Has adversely affected print and mass communication. Industry E.g. Video production, blogs, social media etc.
3. Photography Industry is dominated by young people
4. Cosmetic Industry. E.g. soap, oil, lotion
5. What other examples of effect of craft Production in your area have you observe?

Mass Production : Introduction



It came into existence with industrial revolution which can be categorized as;

1. 1st Industrial revolution in Britain (1760s to 1830s) with the introduction of steam engines . These replaced work done by hands e.g. in ginnery and inventing of locomotion engines.
2. 2nd Industrial revolution took place in 1870 to 1914.

This was associated with invention of electricity, break throughs in technology, chemical industry, more knowledge of organisms with advances in biological etc.

Mass Production : Introduction



Stevenson (2007) defines mass production as the use of low skilled or semi-skilled workers to produce many goods by use of specialized and expensive equipment.

- It is characterized by standardized goods.
- High efficiency .
- Production lines .

Stevenson, W. J. (2007). *Operations Management (13th ed.)*.

McGraw-Hill Education,

pg 22

Mass Production : Introduction Cont'd



- The initial mass production can be traced to the ideas of Taylor who explained that it was possible to manage work scientifically. This introduced division of labour.
- Ford applied the suggestions of Taylor and mass produced the first cheap in 1918.
- There after there was escalation of mass produced goods that flooded markets by 1970s.

Mass Production : Introduction Cont'd



From the initial automation of mass production of the 1920s production is highly automated and efficient because of the following technologies : Internet of Things (IoT), Big Data, Cloud Computing, Additive Manufacturing, Autonomous Robots , System Integration, Augmented Reality (AR), Cyber-Physical Systems (CPSs), 3D printing, electric vehicles and Simulation.

Bigliardi et al. (2020) pg 323

Add Robots, AI and block chain technology.

Bigliardia. B, Bottania, E & Casella, G. (2020)'.Enabling technologies, application areas and impact of industry. 4.0:Procedia Manufacturing (42) 322–326
www.sciencedirect.com

Characteristics of Mass Production



1. Production of goods for the mass market is done through forecasting with the assumption that there will always be a customer wanting a product which is not the case.
2. Machines and facilities run to economically produce batch quantities. The aim is to keep the machine busy even when there are no customers to buy the products.

Characteristics of Mass Production



3. Stock is seen as part of the production process. To allow the machines to run at optimal capacity it is necessary to hold buffer stock.

4. Stock is held just in case. This leads to operational and supportive processes running smoothly. However it increases cost of inventory e.g. maintenance, occupying space that is not productive etc.

5. Production process is planned and run by production teams. All other teams are seen as supportive resources.

Pre-requisite for Mass Production



1. Design and Planning before actual production starts must be done.
2. Source of input supplies must be known.
3. Assembly Line Production should be technically fit.
4. Quality Control: Mechanism to identify defects should be in place at each stage of manufacturing.
5. Distribution and sale logistics should be in place to transport finished goods

Advantages of Mass Production



1. The production costs are low because of automation and production of similar goods.
2. Mass produced goods are relatively cheaper. This is good because many people can afford them hence it increases the living standards of the citizens.
3. Mass production offers employment to a large number of people, (Efstathiou et al.2005)

Disadvantages of Mass Production



1. There is a lot of wastage of resources. E.g., Input can get spoilt an the await the conversion process.
2. High cost of maintaining inventory in form of inputs, semi-finished and finished products.
3. Space occupied by inventory is wasted instead of being used for more productive purpose.
4. Manufactured goods can become obsolete as they await for a buyer.
5. Lead times may be long because of batch production.

Mass Production and Supply Chain Dynamics



1. The supply chains are simple, long and predictable.
2. The focus is that transporters must have specialized means of transportation that is capable of carrying large amounts of supplies of inputs and products.
3. The suppliers must also have large capacity to meet huge orders.
4. The buyer bears the burden of storage of goods until the customer is available.
5. The manufacturing premises have large warehouses to store input and output.

Mass Production and Supply Chain Dynamics Continued



1. Since the 80s competition increased rapidly from other forms on manufacturing.
2. Increase in purchasing power in developed countries has led to focus on quality and demand discrimination.
3. Heavy initial capital investment make them vulnerable.
4. Large multinational companies have focus on developing countries with younger population with higher demand for fast moving consumer goods.

Task for the Week



1. Why do you think governments of developing nations continue to fund mass production?
2. How should mass producers minimize supply chain risks?
3. What are examples of mass producing industries in your country?
4. What is the source of local dynamics that affect mass production supply chains in your area?

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THANK YOU ALL
SEE YOU IN THE NEXT
CLASS