

Enabling Environmental Factors Operating Within the Value Chain of Malt Production: The Case of Asella Malt Factory, Oromia Regional State, Ethiopia

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ABSTRACT

The purpose of charting enabling environment is to understand the factors that affect the entire value chain, and to examine the powers and interests that are driving the change. The main purpose of the study was to assess the enabling environmental factors of operation within the value chain in case of Malt Production of Asella Malt Factory, Oromia Regional State, Ethiopia. Both quantitative and qualitative descriptive survey methods were used for the study. The quota sampling technique was used to determine the sample size. The respondents were employees of the Factory which about 20% of the total population identified through non-probabilistic purposive sampling. Data were collected through questionnaire, and organized, tabulated, presented, analyzed and interpreted using descriptive statistical analysis. The finding revealed that regarding materials flow and continuous improvement factors were weak with AMF as indicated by arithmetic mean 3.84(78%) and 3.48(70%) respectively. As recommendation, the factory should identify and understand its core and non-core activities to have improved and efficient value chain networks consistently. The material flow should be timely and sufficient to overcome production bottlenecks. Further studies are recommended to understand the casual relationship between the various variables that affect the operational performance of the firm.

Key Words: Environment, Value Chain, Information Flow, Material Flow, and Relationship

1. INTRODUCTION

1.1 Background of the Study

According to Kumar *et al.* (2012), the enabling environment consists of critical

factors that shape the value chain ecosystem and operating conditions. These “enabling environment” factors are created by and that are beyond the direct control of economic actors in the value chain. The purpose of charting enabling environment is to understand the factors that affect the entire value chain, and to examine the powers and interests that are driving the change. Peng and Pheng (2011) stated that the comprehensiveness of the environmental impacts is currently represented by a single sign. Although a single sign can offer the customers an intuitive explanation of the products’ environmental compatibility, it may suppress other information when evaluating the products’ environmental quality.

The reduction of material flows with the ultimate aim of a circular flow economy is a central aspect of a sustainable development. Options for a reuse of parts and components or alternatively their material recycling are mostly defined during the initial product design (Blume and Walther, 2010). Fearne *at el.* (2009) study determined that the objective of a material flow is to deliver efficiently the required type, volume and quality of product to maximize consumer value. Mustering the required capacity to ensure a steady supply of raw materials in the desired quality and quantity, above all, demands setting right commodity production (UNDP, 2011). It is necessary to mention that the information flow within the value chain is the best way for the value chain actors to identify and access to services that satisfy their need as concluded in the study of Nguyen (2010).

As discussed by Brown (2009), by exploiting the upstream and downstream information flowing along the value chain, the firms may try to bypass the intermediaries creating new business models. Information should be collected, shared and used throughout a value chain to improve the chain's effectiveness and efficiency. Transparent and continuous flow of information and communication on the changes within the chain and the results being achieved is essential for strategy implementation. Communication is an important element affecting the performance of value chains (UNIDO, 2009). Market information on product and process requirements is key to being able to produce the right value for the right market (Trienekens, 2011).

A value network is a web of relationships that generates economic value and other benefits through complex dynamic exchanges between two or more individuals, groups, or organizations (Brown, 2009). Value chain's relationships are the foundation of their success, often driving improvement or causing stagnation in material and information flows. Basic relationships are often sufficient for exchanges that are largely transactional and where there are limited opportunities for greater efficiency, value adding. Relationships' strengths are based upon shared visions, culture and leadership; compatible structures and processes; mutual alignment of ability, resources and motivation, and commitment to continuous improvement, in particular through innovation in products, processes and systems (Fearne *et al.*, 2009).

Ilyas *et al.* (2006) discussed that the decision of the mode relationship between the value chain partners is strategic in nature and has the primary bearing on the success of the value chain. The choice of mode of relationship among the VC partners is critical in the value chain's efficiency and has to be focused on for reaping strategic benefits for the organization. The mode of relationship would depend on the relative

position of the partners and the balance of forces identified in the value chain relationship strategy matrix. The basic characteristic of value chain is market-focused collaboration; different business enterprises working together to produce and market products and services in effective and efficient manner in order to meet the needs of targeted consumer (PSD and TTWG, 2006).

AMF was established in 1984 and situated 167 km southeast of Addis Ababa. Malt is the major input for beer production and the company currently supplies around 40% of this growing Ethiopian market. The barley for the malt production is supplied by small holder farmers living in the locality of the factory (AMF Bulletin, 2012). Brewers are importing 60% of their malt requirements, creating a significant market potential for high quality domestically produced malt barley. The study focused on assessment of enabling environmental factors of operation within the value chain in case of AMF. The condition that analysis of literature and discussion brings questions for further discussion, action research in value chain projects, and shared learning in networks of chain actors as indicated by Seville *et al.* (2011). Thus, the above discussed points initiated the researcher to conduct this study with specified research title and area.

1.2 Objective of the Study

The general objective of the study was to assess the enabling environmental factors operating within the value chain of Malt Production in case of Asella Malt Factory, Oromia Regional State, Ethiopia.

1.3 Significance of the Study

The result of this research could be employed mainly for AMF in describing and evaluating its enabling environmental factors operating within the value chain of malt production. The study is expected to be an input for related organizations. The study could also help for further research activities to get deeper analysis of similar research or related topics of interests.

2. RESEARCH METHODOLOGY

2.1 Research Design

In this study a mixed research approach was employed which makes the use of both quantitative and qualitative descriptive methods. Quantitative method was used for its applicability to phenomenon that can be expressed in terms of quantity, and to apply frequency and percentage of respondents' data collected through questionnaires. To this end, the data collected would be coded into Statistical Package for Social Science (SPSS) software, and the frequency and percentage of the data would be generated for analysis and interpretation. When used along with quantitative methods, qualitative research could help the researcher to interpret and better understand the complex reality of a given situation and the implications of quantitative data. Due to these facts, therefore, a mixed approach of research methods was employed in this study.

2.2 Sample Design

The researcher employed quota sampling method which is non-probability purposive sampling to ensure that the various sub-groups in a population are represented on pertinent sample characteristics to the exact extent that the investigator desire. The quota sampling has major advantages over probability sampling such as speed of data collection, lower costs, and convenience. During the study the company contained 248 permanent and temporary employees, 15% of whom are women. In quota sampling, the researcher has a quota to achieve. Accordingly, the investigator assigned 50 respondents as quota through non probablistic purposive sampling. From those, 5 assigned to managing directors, 18 assigned to supply and production workers, 5 assigned to quality controlling workers, 18 assigned to commercial workers, 2 assigned to planning workers and 2 assigned to finance management workers. Aggregating the various quotas yields a sample that

represents the desired proportion of each sub-group. To determine the sample size the investigator preferred to use a technique developed by Carvalho (1984). Accordingly, the study collected data from 20% of the total population (248) which was high sample size determination as the above table of sample size determination showed. As a result, this method permitted the researcher to identify in advance the major data that would be needed for the investigation.

2.3 Data Collection Method

The research employed both primary and secondary sources of data. The researcher gathered primary data through questionnaires to assess the role of the operation of AMF in its malt production value chain. Secondary data would be considered to be collected from the Asella malt factory bulletin as well as interview method used to get information about the factory background before the questionnaires were developed. Besides, relevant published literature was referred as secondary data source. Once the required amount of data was collected, it was encoded in the SPSS software as an input for analysis.

2.4 Method of Analysis

The research used both qualitative and quantitative analysis. The quantitative primary data collected from the identified respondents were encoded into SPSS software. Simple descriptive statistics such as mean, frequency, percentages and cross tabulation were used for analysis. The data gathered were organized, tabulated, presented, analyzed and interpreted by using descriptive statistical analysis. While analyzing and interpreting data, regarding response scale, the percentage response of 'Agree' was the total percentage response of strongly agree and agree, and the percentage response of 'Disagree' was the total percentage response of strongly disagree and disagree.

3. RESULTS AND DISCUSSION

3.1 Characteristics of Respondents

Table 1: Characteristics of Respondents by Sex, Age, Qualification, and Service Year

Variables	Sex			Age					Qualification				Year of Service						
	Male	Female	Total	18-25	26-29	30-35	Above 35	Total	Certificate	Diploma	BA/BSC	Masters	Total	1-3 Year	4-6 Year	7-10 Year	10 & Above	Total	
Respondents (N=50)	No	42	8	50	7	12	15	16	50	2	5	38	5	50	9	12	9	20	50
	%	84	16	100	14	24	30	32	100	4	10	76	10	100	18	24	18	40	100

Source: Field Data (2013)

Based on the data collected through questionnaire method, the respondents' characteristics were presented as follow. Accordingly, According to the data in Table-1, out of a total 50 respondents, majority of the respondents 42(84%) were males while 8(16%) of the respondents were females. This indicates that the numbers of male respondents was greater than the females in the factory. Age distribution was concerned, observing from total, 7(14%) of the respondents were between 18 and 25 years, while 12(24%) of them were between 26 and 29 years of age and 15(30%) of the respondents were between 30 and 35 years old. The majority 16(32%) of the respondents were in the adult age, above 35 years of age.

The next characteristic was the respondents' educational qualification. Accordingly, observing in general, it was found that 2(4%) of them were certified, while 5(10%) of them were TVET graduates and 38(76%) of the respondents were bachelor degree holder. Whereas 5(10%) of them were Master degree qualified. None of the respondents were PhD holders. The data shows that the majority of respondents were bachelor degree holder. The other aspect of respondents' background characteristics was regarding the years of experience. Consequently, the service year of respondents was concerned that 7(14%) of the respondents had between 1 and 3 years of work experience while 12(24%) of the

respondents had 4 to 6 years of work experience and 9(18%) of respondents had between 7 and 9 years of work experience. The remaining majority 20(40%) of the respondents indicated that they had 10 and above years of work experience.

As presented in Table-2, on the subject of item 1, 32(64%) of respondents disagreed with that well-timed material flow has practicing by the company to deliver efficiently the required volume and quality of product to maximize consumer value. Also to item 2, 31(62%) of respondents replied disagree to that customers are well satisfying with the company's material flow in its operational performance within value chain. In opponent to the study result, the objective of a material flow is to deliver efficiently the required type, volume and quality of product to maximize consumer value as stated by Fearne *at el.* (2009). Similarly, for item 3, 39(78%) of respondents disagreed with that AMF has efficient raw material flow that enables its operational performance within value chain. The study shows that the environment has not allowed the factory's operation to contribute to its value chain regarding practicing well-timed material flow to deliver efficiently the required volume and quality of product as well as raw material flow that enable its operational performance within value chain.

3.2 Enabling Environmental Factors Operating within the Value Chain

Table 2: Enabling Environmental Factors Operating within the Value Chain of Malt Production

S/N	Items Statement	Respondents' Responses										Mean	St. Deviation
		Frequency and Percentage											
		SA		A		N		DA		SDA			
		N _Q	%	N _Q	%	N _Q	%	N _Q	%	N _Q	%		
1	Material Flow Factor												
	Well-timed material flow has practicing by the company to deliver efficiently the required volume and quality of product to maximize consumer value.	2	4	11	22	5	10	25	50	7	14	3.48	1.11
2	The company has efficient raw material flow that enables its operational performance within value chain.	1	2	7	14	3	6	27	54	12	24	3.84	1.02
3	The customers are well satisfying with the company's material flow in its operating performance within value chain.	2	4	13	26	4	8	26	54	5	10	3.38	1.10
4	The company has setting right product production by collecting the required capacity to ensure a stable supply of raw materials in the desired quality and quantity.	5	10	13	26	4	8	27	54	1	2	3.12	1.14
5	Information Flow												
	Quality information has flowing within the value chain for the factory's value chain actors to identify services that satisfy their need.	12	24	24	48	4	16	7	14	3	6	2.30	1.16
6	Information has efficiently and timely collected, shared and used throughout the value chain to access to services they need in the factory.	10	20	20	40	5	10	15	30	-	-	2.50	1.23
7	Transparent and continuous flow of information and communication on the changes within the chain has working by the company for the value chains performance.	9	18	22	24	6	12	12	24	1	2	2.48	1.11
8	Relationship Factor												
	Asella malt factory value chain's relationships are based upon shared visions, culture and leadership, compatible structures and processes, and mutual alignment of ability.	16	32	17	34	6	12	9	18	2	4	2.28	1.21
9	Resources and motivation, and commitment to continuous improvement are efficiently considered by the factory in value chain's relationships.	3	6	9	18	5	10	27	54	6	12	3.48	1.11
10	Asella malt factory has cooperation and collaboration throughout the value chain that could be essential to the efficiency and viability of the chain.	8	16	26	52	3	6	13	26	-	-	2.42	1.05
11	The company has effective mode of relationship that depend on the relative position of the partners and the balance of forces identified in the value chain relationship.	15	30	18	36	5	10	9	18	3	6	2.34	1.25
12	The factory has developed a chain with actors that communicate with each other for better products to have a good and lasting business.	12	24	23	46	6	12	6	12	3	6	2.30	1.15

Source: SPSS Output (2013)

For item 4, 28(56%) of respondents responded disagree with that AMF has setting right product production by collecting the required capacity to ensure a stable supply of raw materials in the desired quality and quantity. In opposite to the research finding, UNDP (2011) discussed that meeting the required capacity to ensure a steady supply of raw materials in the desired quality and quantity, above all, demands setting right commodity production. As discussed in Presentation of Investors by Monitor Group (2012), due to the shortage and the poor quality of malt from Asella malt factory, imports are a fast growing source of reliable malt for brewers

in Ethiopia. Thus, from the survey, the researcher identifies that the environment has not enabled AMF's operation to contribute to its value chain in relation to setting right product production by gathering the required capacity to ensure a stable supply of raw materials in the desired quality and quantity.

In similar Table, for item 5, 36(72%) of respondents replied agree to that quality information has flowing within the value chain for the factory's value chain actors to identify and have access to services that satisfy their need. Also, regarding item 6, 30(60%) of respondents answered agree to that information has efficiently and timely

collected, shared and used throughout the value chain to access to services they need in the factory. Alike to the investigation result, Brown (2009) discussed that information should be collected, shared and used throughout a value chain to improve the chain's effectiveness and efficiency. In consent to the study result, as concluded in the study of Nguyen (2010), it is necessary to mention that the information flow within the value chain is the best way for the value chain actors to identify and access to services that satisfy their need. The finding indicates that the environment has facilitated AMF's operation to contribute to its value chain regarding information flow within the value chain and collection and sharing of information throughout the value chain.

For item 7, 31(62%) of respondents agreed with that transparent and continuous flow of information and communication on the changes within the chain have working by the company for the value chains performance. Identical to the research result, UNIDO (2009) agreed that communication is an important element affecting the performance of value chains. The finding suggests that the environment has permitted Asella malt factory's operation to contribute to its production value chain concerning transparent and continuous flow of information on the changes within the chain for the value chains performance.

To answer the same research question, regarding item 8, 33(66%) of respondents responded agree to that Asella malt factory's value chain's relationships are based upon shared visions, culture and leadership, compatible structures and processes, and mutual alignment of ability. In supporting to the scrutinize result, Fearné *at el.* (2009) stated that the chains relationships' strengths are based upon shared visions, culture and leadership; compatible structures and processes; and mutual alignment of ability to continuous improvement, particularly through innovation in products, processes and systems. From the research result, as

supported by the literature, it was possible to recognize that the environment has enabled AMF's operation to contribute to its production value chain regarding consideration of vision, culture, leadership, structure, process and ability in value chain's relationships.

Relating to item 9, 33(66%) of respondents responded disagree to that resources and motivation and commitment to continuous improvement are efficiently considered by the factory in value chain's relationships. But, Fearné *at el.* (2009) discussed that resource, commitment as well as motivation needs to be considered in value chain's relationships for consistent improvement. Also Trienekens (2011) concluded as value chain actors needs to be motivated to improve their position in the chain. From the study result the researcher identifies that the environment has not allowed AMF's operation to contribute to its value chain in relation to considering resource, motivation and commitment in the value chain's relationships.

For item 10, 34(68%) of respondents agreed with that there are cooperation and collaboration throughout the value chain that could be essential to the efficiency and viability of the chain. Wong (2012) stated that collaboration throughout the value chain are essential to the efficacy and viability of the chains, i.e., any attempt by a value chain member to modify or terminate its role in the value chain will cause a disruption in fundamental value chain relations, if not coordinated with value chain partners. As supported by the literature, the research finding indicates that the environment has permitted AMF's operation to contribute to its production value chain regarding collaboration throughout value chain for efficiency and feasibility of the chain.

From the same Table, concerning item 11, 33(66%) of respondents replied positively to that AMF has effective mode of relationship that depend on the relative position of the partners and the balance of forces identified in the value chain

relationship. Similar to the finding, the choice of mode of relationship among the value chain partners is critical in the value chain's efficiency and has to be focused on for getting strategic benefits for the organization. Further, the mode of relationship would depend on the relative position of the partners and the balance of forces identified in the value chain relationship strategy matrix as discussed by Ilyas *et al.* (2006). As the research shows, the environment has facilitated AMF's operation to contribute to its value chain relating to form of relationship that depends on the relative position of the partners and the balance of forces recognized in the value chain network.

Regarding item 12, 35(70%) of respondents agreed with that the factory has developed a chain with actors that communicate with each other to have a good and lasting business. Alike to the research result, Arsema (2008) discussed that with aim of a chain well developed with actors that communicate with each other for better products will bring a good and lasting business. The study result specifies that, as 70% of respondents responded, the environment has enabled AMF's operation to contribute to its production value chain regarding to the development of value chain actors that communicate each other.

4. CONCLUSION AND RECOMMENDATION

4.1 Conclusion

The enabling environment consists of critical factors that shape the value chain ecosystem and operating conditions. Pertaining to the environment enabling the factory's operation to contribute to its value chain, the study result recognized that AMF has not done well concerning to shaping the value chain network and operating situations, material flow in operating within the value chain that influence its consumer value and commodity production and consideration of resource, motivation and commitment to continuous improvement of value chain's relationships. Due to lack of

shaping of the value chain network the factory did not has interesting linkage among actors. This resulted challenge to identify core and non-core value chain activities.

However, the factory has undertaken well concerning the flow of information that helps the value chain actors to identify and access to services that please their need, transparent and continuous flow of information and communication on the changes within the chain, the value chain's relationships that based on vision, culture, structure, process and mutual alignment of ability, the mode on which the value chains relationship depend and the development of value chain actors. Because of good communication channels available in the factory, the flow of information in the factory among the actors looked interesting.

4.2 Recommendation

The research result suggests that Asella malt factory needs to improve its enabling environmental factors operating within the value chain of malt production regarding to shaping the value chain network and operating situations, material flow in operating within the value the chain and consideration of resource, motivation and commitment within the value chain. Through regularly follow upping to identify where the value chain network is not working well, the factory should shape the network, because of this the operation situations within the value chain become productive. The material flow should be timely and sufficient to overcome production bottleneck. Initiating actors and creating commitment among actors is an important task that the factory should implement to bring staying and productive actors. Further studies are recommended to investigate to understand the casual relationship between the various variables that affect the operational performance of the firm.

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