



(RESEARCH ARTICLE)



## E-Business and supply chain integration is the ultimate online shopping

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### Abstract

E-business has risen as a key empowering influence to drive supply chain integration. Organizations can use the internet to achieve worldwide visibility on their extended trading network. The influence of e-business on supply chain integration can be defined laterally the dimensions of information integration, synchronized planning, coordinated workflow, and new business models. An Important value can be added to e-business by enabling supply chain integration. In this report, the author has taken a popular rising e-commerce company from Bangladesh. The name of this company is AJKERDEAL. It is a Bangladeshi online retail company, that focuses on a low-cost-oriented supply chain to maintain cost efficiency. The company's success is attributed to its superior supply chain practices over local competitors. However, Western multinational retailers may struggle in Bangladesh due to their differing values, cultures, and beliefs, potentially jeopardizing their key market.

**Keywords:** AJKERDEAL; E-business; Supply Chain; E-commerce

### 1. Introduction

AjkerDeal.com biggest online industry in Bangladesh; this particular marketplace was released in September 2023 <sup>[1]</sup>. In the last five years, AJKERDEAL has been trying to gain the confidence of Bangladeshi internet shoppers. Today AJKERDEAL is essentially the most popular internet marketplace in Bangladesh. The organization primarily deals with internet products selling (all sorts of items) though they've many retail stores in different locations. This particular company is doing B2C and B2B business. AJKERDEAL has accommodated more than 150000 goods from around 500 different groups on their website, and over 2000 top sellers are selling with them; these traders are reliable labels in the online industry in Bangladesh <sup>[2]</sup>. Simultaneously they determine product quality; and verify merchandise prices in the marketplace before displaying them in front of consumers. The fantastic choice of the apparel is included by-products, ornaments, watches, cosmetics, perfumes, shoes and sandals, mobile phones, appliances, home devices, kitchen appliances, devices, computer and computer accessories, laptops, foods and beverages, sports products, books and CD, musical instruments, house decoration solutions, and so on. Ajkerdeal.com is the biggest online shopping mall with the absolute best customer support in the nation. Their CRM department remains available twenty-four hours, 7 days a week to give service that is perfect for their precious buyers & sellers through a flock of well-trained agents. During startup, this unique business started up a few retail stores to survive in the market to create the day OPEX (operating cost). From the beginning, it focused on the low-price tag. For that, it is to focus on its supply chain effectiveness. Its goal will be to reach a worldwide marketplace and also serve 20 nations, with over 100 Distribution Centers as well as 15,000 retailers dispersed throughout Bangladesh in 10 years <sup>[3]</sup>. Its vision is generally to function as the largest list business worldwide by providing a huge assortment of high quality and quality products program at a

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reduced cost. AJKERDEAL caters to diverse consumers across cultures, races, and genders, with stores in low-income areas and warehouses aimed at reducing costs and protecting the largest local store.

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## 2. Literature Review

E-commerce has enhanced a business revolution in the way of trading. The commencement in online revolution makes that conceivable. The entire world is going using a sizable market transformation now. The web on the day is needed as a business resource. Data statistics indicate that fifty-two % of the world's folks are online users. This can provide us a clue of precisely how e-commerce will influence the future or perhaps possibly affecting the business of culture and our life now <sup>[4]</sup>. The idea of e-commerce is applied in many business models, i.e. B2B, B2C and C2C respectively. There is a lot of change in trade for last two decades. In Bangladesh, e-commerce is still within the increasing stage, though it's going inside the late 1990s. On that time, small amounts of nonresident Bangladeshi used e-commerce services to post gifts and books for their dearest one only in Dhaka city. After that within the entire year 2001 to 2008, it's experienced very little growth through lack of infrastructure and data <sup>[5]</sup>. Issues have started changing in 2012 when 2 e-commerce sites AKHONI and AJKERDEAL present themselves into online selling. They got a great appreciation from the customers mostly in Dhaka city. Decent growth was observed in e-commerce within last few years; several e-commerce Service Providers launch the services theirs. The website likeRokomari.com, which followed a marketing type near that of Amazon, has begun promoting books. Presently holding the industry's best place, their company started growing into various other product categories. Yet another example of this is Bikroy.com; they implemented the exclusive business diagram. They have the investment and selling of Choices within the platform of it is for consumer goods. FMCG along with the food business also joins the e-commerce sector the industry is represented by othoba.com, pikhaboo.com, and then chaldal.com <sup>[6]</sup>. The conglomerate of respected companies and Country business organizations showed interest in entering the e-commerce sector. Online food delivery services similarly received an incredibly boundless reply from diet fans. Because of high traffic and also bad driving conditions customers decide to purchase food online rather than go to the restaurant. Hungry Food NAKI and PANDA are 2 popular delivery e-commerce platforms in Dhaka and Chittagong and much more internet usage showed tremendous prosperity in E-Trade progress in Bangladesh.

AJKERDEAL imports products from China India and South Korea especially, raw materials and some readymade products <sup>[7]</sup>. Retail stores and some super shops from different places ordered products from AJKERDEAL as it provides all types of products at cheaper rate. Its supply chain begins with raw material suppliers. Third-party logistics companies are used to transport the products to the warehouse as well as the raw material transportation to the manufacturing facilities. After the products are manufactured, finished goods are sent to warehouses by third-party logistics. The goods are then sent from warehouses to distribution centers by their own transportation system which is discussed below. It has 150 distribution centers in total. Less than 48 hours are spent in warehouses to reach. Customers can choose to ship the products to the store <sup>[8]</sup>. Vendors and retail stores are working in close cooperation. The customers will then pick up and purchase the products <sup>[9]</sup>. The preferred product will then be picked from the shelf. Information and money flow from customers. The following diagram shows its simplified outline of the supply chain.

Sharing information is crucial for unified products and cash flow between macro and micro supply chains within an organization, ensuring smooth operations between internal and external features <sup>[10]</sup>. An inefficacy everywhere in the chain, whether indoor or outdoor, the chain as being a total must result. The actual competitive worth is not maximized. The whole chain is equally as strong as the weakest link of its. For the macro or external source, chain items run from the different origins of the raw material (n tier supplier) Stages within the last industry chain (customer at n-tier). Cash (that is, funds) moves back down the Label. Ideally, it offers value to each hyperlink in the supply chain and also creates earnings. Houlihan (1988) <sup>[11]</sup> Noted in the late 1980s which the supply chain was viewed as a private process, which meant the various Chain links need to operate in most likely the most seamless way possible. Describes the supply chain as a ' system of vendors, producers, distributors, retailers, along with merchant Clients.

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## 3. Methodology

Synchronization of planning describes the joint style as well as execution of the launch, forecast, along with replenishment plans for the merchandise. Synchronization planning decides what to do. It's a mutual agreement with the info shared; relevant action based on that understanding among members. People of a supply chain can easily, consequently, have their order fulfilled Coordinated plans to seal in most replenishments exactly the same target the best buyer requirements.

### 3.1. Coordination of workflow

Workflow coordination states to automated as well as streamlined workflow events involving supply chain associates. Below, we consider single phase much more integration by describing not simply "what" we are going to have to do with shared info, but 'how,' like procurement activities are usually strongly related from producer to provider Therefore advantages might be cost-effective, time, and reliable attained. Item development which requires much tasks comparable efficiency likewise enables businesses to be integrated. In a very decent position, supply chain companions will strongly rely on technology solutions for automating numerous, or perhaps most of the workflow measures both inner and Intra-Enterprise

### 3.2. The New Business Models

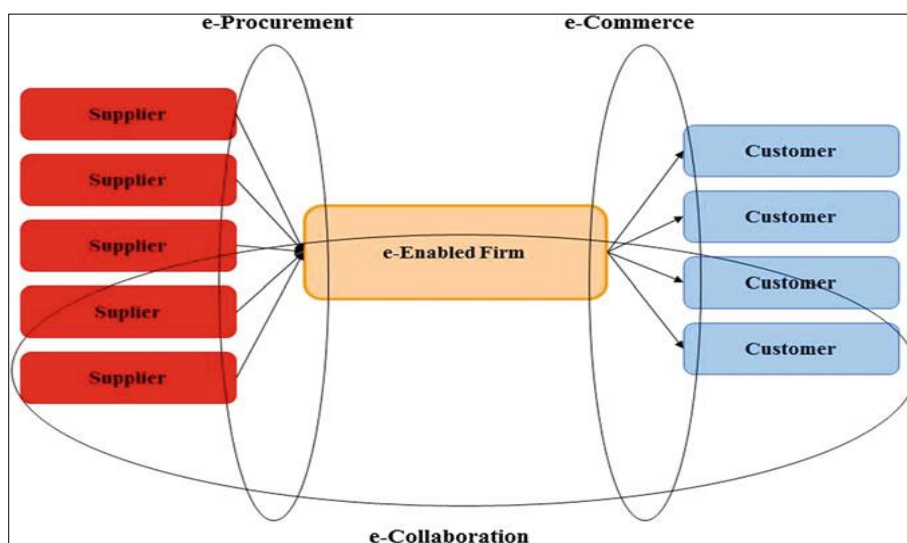
Utilizing e-commerce strategies to supply chain integration offers inefficiency so more than those gradual developments. Quite a few firms are discovering totally new business approaches, as well as business opportunities, aren't possible before. E-business will help trading to defining the supply flows in addition to participants' tasks as well as roles are able to shift to boost the general quality of the supply chain. A supply chain system could collectively produce items that are new, pursue mass modification, and also penetrate brand new buyer segments and markets. As a result of internet-fueled integration, the newer supply chain game rules can emerge.

### 3.3. The Role of Internet Technology

Integration of the supply chain isn't new; Most businesses do have these developed it as a direction to achieve affordability.IT is a significant influence for a while now. The e-business, and type of net computing, has today arisen as probably the most convincing allowance for integration in the supply chain. Since it's free, standard-based, along practically omnipresent, businesses are able to utilize the web to acquire global exposure via their expanding trading partners networking and assist them to react rapidly to evolving market problems including consumer demand as well as the accessibility of resources. The following areas offer adequate proof of it, with illustrations of companies plus industries demonstrating how the supply chain techniques of theirs have essentially changed on the internet.

### 3.4. E-fulfillment

This particular concept is even wider compared to e-commerce which raises order placement as well as fulfillment efficiency. Explain the issues of efficiently accomplishing e compliance, since it demands to exchange this information in genuine time between supply chain partners. Lee and also Whang (2001) presented a framework to make e fulfillment effective based upon a great usage of info & using information that is available. E-fulfillment demands the usage of information batches including client purchase as well as inventory levels, along with web-based production amounts to make use of cost savings, shorter order cycle times, reduction of inventories, among others (bellow figure). This great real-time exchange of info as well as information is frequently processed and also handled via the info systems.



**Figure 1** E-business forms and their impact on the supply chain (source Johnson and Whang 2002)

### 3.5. Information Distortion and the Bullwhip Effect

Information sharing is essential in making specific a supply chain is pressed by natural buyer demands. This is probably the most operative technique for managing the problematic issues or need information distortion inside a supply chain. A great means to battle the bullwhip effect is generating request information clear. Surely, this sort of openness is thought the basis of supply chain integration within the food industry and it's a crucial component of "Effective Customer Response," an action toward complete supply chain integration in that particular business. Businesses involved in sharing information generally provide info schedules, inventory status, production schedules, promotion plans, demand forecasts, and sales information for shipments.

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## 4. The impact of ERP systems on SCM

ERP are methods that connect different features inside an enterprise, additionally to supply chain associates of an enterprise (i.e. vendors, distributors, strategies suppliers of third parties), allowing the various business associates and organizational entities to chat about information, product schedules, sales records, production planning, logistics, order status, for example, plus advertising offers. Together with the quick advancement of the Internet, airers4you earth has improved significantly along with the assortment of enterprises. The concept of enterprise products has changed with E-business<sup>[14]</sup>. ERP's new generation completely integrates and optimizes company operations inside a transparent internal in addition to the external, virtual community. A bridge is provided by online technology to create e-business feasible between companies also the company associates of theirs, while e-business makes it possible for the ERP system a lot more receptive and public. ERP is not restricted to a private enterprise but is often considered an integrated system over the value chain of vendors within the exact same industry or across industries, established several primary SCM patterns that are reliant on ERP.

All those are:

### 4.1. Electronic Workflow Coordination

The web enables businesses to go one step more, integrating, by coordinating, and also automating serious business processes. Workflow coordination is able to include tasks for example procurement, delivery of orders, modifications in engineering, SEO of design, along with switches in monetary terms. As an outcome, supply chain procedures are significantly more cost-effective, efficient, fast, and a reduced amount of error-prone. Below is an assortment of illustrations of just how various organizations are leading method management in these along with other fields.

### 4.2. Supply Chain Overview and Measuring

Supply chain integration will be accomplished only when every participant will see the return proportionate by the invested effort. The monitoring of supply chain performance is a fascinating innovative area. Supply chain management needs to initiate with close monitoring for many different supply chains involved process<sup>[15]</sup>. Many technological solutions invented for update information whereas products and information flows over the numerous parts of the supply chain. Some of them are briefly described bellow:

### 4.3. Procurement

AJKERDEAL deals directly with manufacturers. Hence, middlemen are eliminated. Suppliers are taking care of the inventory of AJKERDEAL using AJKERDEAL's information technology. This is called vendor managed inventory. This adds to AJKERDEAL's low costs and, hence, it can maintain a low price. This means an affordable price for customers. AJKERDEAL is keeping on doing vertical backward and related horizontal integration. This also reduces the AJKERDEAL for AJKERDEAL's use of third-party logistics<sup>[16]</sup>. Moreover, AJKERDEAL uses its buying powers to keep costs low. It forces its suppliers to make changes to their manufacturing and business processes to keep their costs low. The suppliers continuously improve their efficiency to cope up.

### 4.4. Order Processing

Information and money flow from customers. AJKERDEAL uses an integrated technology imbedded in its products for order fulfillment. Stock Keeping Units is used to scan a product that is connected to the Retail network system. From there, thus, real-time data is found by vendors and suppliers. Information regarding which products is being purchased, how much is being purchased, and which goods should be replenished is found. The vendors can easily understand which products to keep and which products to leave. As orders are processed for the vendors, AJKERDEAL gets its mark up for reserving shelving space or online space. AJKERDEAL uses the information to understand which products are selling more and which products should be bought in bulk for keeping the costs low<sup>[17]</sup>. There is collaborative planning,

forecasting, and replenishment. These help in the processing of the order. AJKERDEAL endeavor to keep its prices low. It focuses on six sigma, TQM, and lean production approach. It pushes its suppliers to reduce costs. Many of its manufacturers have to continuously revamp and improve their production and supply chain to remain at the forefront of efficiency and low cost.

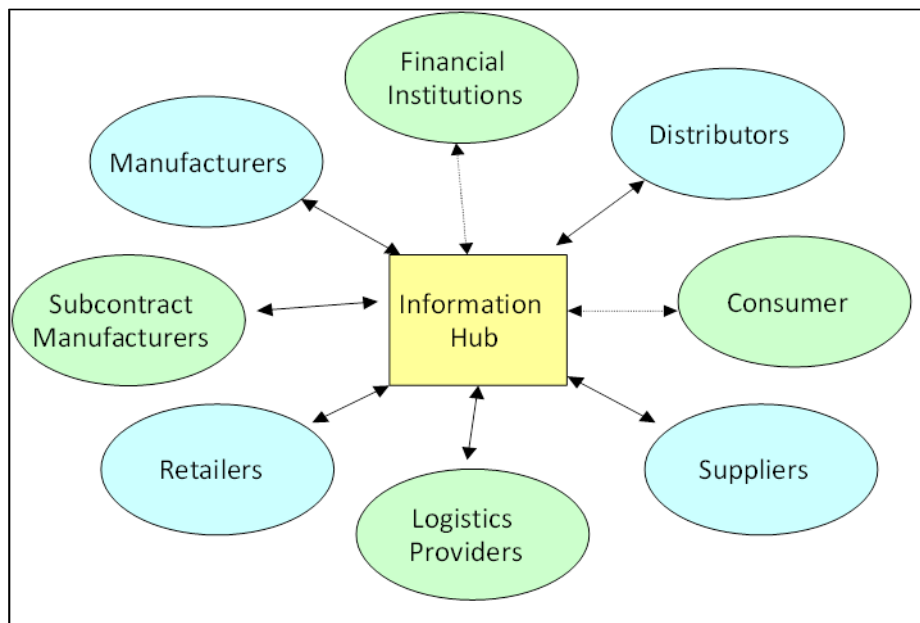
**4.5. Inventory**

AJKERDEAL utilizes cutting edge monitoring and inventory control. This resulted in a far more exact sales forecast than that of the rivals of its. AJKERDEAL utilizes the Point of Sales (POS) system to monitor what has been offered and also what's on the racks. We are able to suggest AJKERDEAL utilize Voice-based Order Filling (VOF) in the food distribution facility. It is able to give details concerning price, etc., type. Massively Parallel Processor is able to keep monitor of the motion of inventory as well as stock levels. We are able to additionally recommend AJKERDEAL to keep a retail network system or maybe vendor managed inventory. It is going to help suppliers to fit AJKERDEAL as an essential component of AJKERDEAL.

**4.6. Logistics Facilities Network**

AJKERDEAL’s extensive distribution network includes 30 general merchandise distribution centers. It has 30 grocery delivery points alongside five fashion delivery points, nine import delivery points. In total there are 140 AJKERDEAL centers that if combined become 100 million sq. feet. AJKERDEAL tries to place its delivery points close to other stores. On average, the distance for general merchandise delivery points is 200 miles. The general delivery points are mostly be used as a warehouse. It also uses as a cross-dock for the trucking fleet. But there is some existing problem as well. In some places, their warehouse is located in some crowded places where the big truck cannot enter at day time and the warehouse rent is also so high in city areas. We can recommend them to set the warehouse after multicriteria decision analysis for the facility location. They can also use the recommended transport system as well after relocating their warehouse. If they set the warehouse beside the city (not inside the city) then can set more distribution center in the city with the same cost which will make AJKERDEAL more customer-friendly.

**4.7. Information System**



**Figure 2** The Information Hub Model

AJKERDEAL concentrates on sharing info with vendors though it's just about the outside supply chain. The suppliers do not have access to the internal supply chain of theirs as well as the demand network. Suppliers simply supply the ordered supplies as well as the responsibility of theirs with that is precisely why at times there are a few issues as lack of items in a while and some warehouses beyond inventory in certain warehouses. Thus, often customers are now being unsatisfied with not receiving products on time. Thus, we are able to suggest AJKERDEAL build an information-sharing program with vendors - Retail Network -- and also uses RFID throughout the supply chain of its. List Network System is going to allow vendors to have info that is precise on the listing of AJKERDEAL. The suppliers are able to design their

creation schedules accordingly. The utilization of RFID enables AJKERDEAL to have real-time info about the whereabouts of the merchandise. RFID scanner is able to read through the info saved on an RFID chip while it catches any signal. Nevertheless, an RFID scanner must be close to the chip for reading the info's. It means that the workers who'll do inventory counting won't need to adjust every product to search for the bar code to scan it.

#### **4.8. AJKERDEAL's current transportation system**

AJKERDEAL is using 3<sup>rd</sup> party logistics for raw material transportation and from the warehouse to the distribution center and distribution center to the retail store or pickup point they are using their vehicle. They are using 3<sup>rd</sup> party logistics support to reach their finished goods products to their warehouses. But their warehouse is also located in crowded areas where the big truck is prohibited to enter in the day time, after reaching near the city of the warehouse located truck wait for night 10 pm and then enter into the city and unload the products. That's why sometimes the company is facing some problems even though they are spending more money on the waiting time. Anyway, the most problem that they are using their vehicle and it's costing a lot because they are using the same model vehicle for transferring goods from warehouse to distribution center and same vehicle for retail shops and pick up points. Some time with very few products, the trucks are going to the retail shop or pick up point which is a loss for the company. That's why sometimes its time consuming as well as more money wasting. In considering their current transportation situation we recommend them the above model.

#### **4.9. Recommended Transportation for AJKERDEAL**

In the delivery system, we are recommending to use an optimized multi-modal transportation system. In this case, AJKERDEAL can use three types of vehicles to solve their transportation system effectively as well as efficiently. Which will reduce their transportation cost and it will bring efficiency in their delivery chain. For example, we are recommending using 3 types of vehicles to reduce the fuel cost, as well as transportation costs. We are using a mother vehicle that will only rotate among the warehouses. For more clarification, we are showing only two warehouses where four distribution centers and some retail shops and delivery points. Medium vehicle 1 will start its journey from warehouse 1 and in the way, it will cover the whole distribution Centre and unload the products according to demand and thus it will reach in warehouse 2 by approximately 40 hrs. By this time medium vehicle2 will also cover another side of the delivery point (we assume that medium vehicle 2 needs 34 hrs. to reach in warehouse 2 and medium vehicle 1 needs 40 hrs.). And after that 1<sup>st</sup>-time medium vehicle2 will load again from warehouse 2 and start distribution towards the distribution Centre and gradually move to warehouse 1. Thus, mother vehicle 1 also will loaded from warehouse 2 and continue distribution and reaching warehouse 1 and continues the cycle. If we use only one medium vehicle then 1 side will get delivery and another side will get late that's why we are using 2 vehicles now from distribution Centre to retail store and parcel pickup point. In this case, we are using a small delivery van to reduce transportation costs. One or multiple delivery vans from the distribution Centre but for example, we are using 1 delivery van which will cover the nearest point delivery shop and parcel pick up point. The delivery van will start distribution from the nearest point and thus complete the cycle of distribution and comeback to the distribution Centre again for 2<sup>nd</sup> time delivery. And from the retail store and parcel pick up point our products will reach the end-users. Thus, all the online ordered delivery will be covered.

#### *Recommendation*

- AJKERDEAL can give access to their suppliers into their internal operation site so that suppliers also can know how much supplies they need, moreover when and where (in which warehouse) needs. If they give access then it will save them time and before being shortage suppliers also try to fill up that empty. After all, the relation between the company and the suppliers will also be strong.
- AJKERDEAL can follow the above-recommended transportation system to reduce the inventory holding cost as well as enhancing the efficiency in their delivery system. The above transportation will reduce their cost as well. It can also minimize a few warehouses from the same direction route, by following the above transportation model.
- It can also expand their Business to rural areas by following the above agent's store system as few people are purchasing from rural areas, hope it will increase soon after familiarization of e-business in the rural areas. By this agent store system, they can establish their brand to the whole country.
- Collaboration with the retail shop where they are doing B2B business. They can give them a discount to sell on their platform as well because the retailer also needs sales thus AJKERDEAL can penetrate new business model B2B2C. That will help them multi ways like making the Brand well known, reducing delivery cost, and time.
- The company can use update tracking technology to determine the nearest distribution center, outlay, or retail store from the order place so that within a short time they can ensure the delivery. It may take a very short time to hand over the product to the consumer. If AJKERDEAL collaborates with the retail shop only then this

delivery system is possible. Customers will be satisfied by getting products in the shortest time and brand value will be established gradually.

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## 5. Conclusion

E-business and supply chain integration is a newly emerged technology in recent time. This sort of idea includes information sharing, collaboration and integration, outsourcing and the appearance of SCM. In this modern era business success fully interdepends on it. For business development and enhancing profitability firms need to focus on supply chain effectiveness. Nowadays we see there are lots of changes in people's purchasing behavior. People all over the world gradually relying on online purchases which is saving their valuable time and money as they don't need to go physically to the shopping centre which needs time and extra transportation costs. So, people prefer to online shopping. On the other hand, sellers are also getting more customers in an online marketplace at a time. Even small producers can sell their home-made products from home without renting a shop. That's why sellers also prefer to sell online ad more importantly, when the supply chain is fully integrated with e-business then there will be an internet shopping revolution & it will be the ultimate online shopping.

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