

# “The study of digitalization in constructional trade of india: An Empirical study”

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## ABSTRACT

Constructional trade is one of the important parts of the Indian economy. India has undergone rapid transformation in the digitalization process. There are no alternatives for digitalization in construction trades. The digitalization is more important for constructional trade of India but simultaneously we have to study there factors is also important. There are about ninety percent trade organizations of India are used the digital planning tools for the constructional trade. The main objective of this study is challenges affecting on digitalization and also there's implementation on constructional trade. In this research study the techniques using for digitization of constructional trade like E-trading and Block chain. Also automating process involves using artificial intelligence for the digitalization Process. Many tools are using in AI including mathematics, optimization, logics and methods used in probability and economics. In this research also study the various types of factors on globalization and liberalization. Digital technologies have created new markets and new business opportunities. They will open new ways in which for companies to integrate their customer's requirements and preferences into their development and production processes, facilitate them to enhance quality and avoid faults in their production processes and create transparency and flexibility across entire process chains. Digitalization is very important in the pandemic era or economic crises period.

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## 1. INTRODUCTION

The future of constructional trading is transforming to the digitalization. The technologies such as block chain, artificial neural network and the block chain networking and high programmable computing is already transforming the nature of work and society as a whole. Artificial Intelligence is open the massive trading opportunities and transforming supply chains. It is therefore at the step of the renewed trading Policy, our work on SCM, and the Digital Single trade strategy. There is no alternative to digitization. Even on the construction market/Trade. Construction needs to catch up. The Digital transformation is an important key for construction trade, Digital transformation is very important for the following factors:

1. Productivity
2. Trading
3. Investments

4. Supply chain Management
5. Security.

Current trade statistics cannot quantify the level of international trade because of digital transactions, i.e. to digital ordering or digital delivery. Both these components together, however, are often accustomed determine the number of quantity of digital trade.

In different words, digital trade may be explained via the character of the group action, i.e. whether it's digitally ordered or digitally delivered. Electronic tools or platforms facilitate trade by ablation intermediaries. Statisticians struggle with however best to quantify this digital trade in a timely manner. A recent journal from the International Fund said: “Recent trends on world trade have attended to focus on protectionist measures and diplomatic tensions... Yet what's often lost within the current discussion is that we are entering a brand new era of trade.” The market capitalization of digital companies is soaring and at exceeding the GDP of economies such as Spain, Mexico or Switzerland. In the United Kingdom, a study

estimated that the annual growth rate over the past decade would have been between 0.4 and 0.7 percentage points higher if benefits arising from digitized products were fully accounted for. The system of national accounts (SNA) is made around the use of finite resources. Although data is usually considered the “new oil”, it’s essentially different to fuels therein that data is “copied and pasted” multiple times and their value depends on how a possible user will utilize these data and create value from it. However, the measurement of cross-border digital trade should be in line with national accounts to permit for correct analysis of statistical indicators.

The statistical community has developed a conceptual framework supported on how digital transactions are undertaken and by whom. E-commerce is defined as something that’s ordered digitally but delivered either physically or digitally. For National trading policy purposes, transactions must to be counteracted by product (broadly goods or services; however, sub-categories should reflect newly created goods and services to permit policymakers to require account of economic developments). Digitally ordered transactions refer to OECD’s definition of e-Trading and define “digitally ordered” as: “An e-commerce transaction [as] the sale or purchase of a decent or service, conducted over computer networks by methods specifically designed The main objective of receiving or placing products” digitally delivered transactions sit down with block chain system “all countries imports and exports that are delivered over countries i.e. over voice or data networks, including the net, in an electronically downloadable format.”

- **Digital transformation for Trading:**

- 1. Digital data**

Digitalize data collecting and also analysis of that digitalized data.

- 2. Automation**

Automating process or programs used for new technologies to create self-organizational systematic process.

- 3. Connectivity**

connection and synchronization of higher to different activity.

- 4. Digital access:** computer for the internal networks.

- **Four keys to the digital transformation:**

four key process are used to digitization of trading their importance extends across every link in the supply chain.

- **supply:** Flow of product, storage and transportation.
- **Procurement:** Purchasing, supplier management and supplier evaluation.
- **Production/construction:** Production and quality control management.
- **Marketing/sales:** Sales/dealer management.
- **After Import/Export marketing:** marketing user support and services. The precise content of each link in the supply chain varies from buyer to buyer. While suppliers of construction materials focus.

## 2. REVIEW OF LITERATURE

**Bristow, Bulati, Mooney and Dou (2004)** through their study developed a concept model that examines the impact of 2 antecedent variables, Internet Savvy, and originality of Property agents on their utilization of Internet resources for sales activities. It then evaluates their perceptions regarding the impact of such Internet utilization on their sales performance. As normally understood, online commerce has triggered faster growth in assets market, which successfully has encouraged the real estate agents to adopt and integrate with Internet resources to boost their productivity and efficiency. At the same time there was an argument suggesting that Internet could have some negative impact on the service providers like property. With transparency of data and increased online interaction between buyer and seller, the worth provided by the real estate broker gets diminished, hence the reduced commission rates. **Minton, Lee, Roth, Kim and Kahle (2012)** did this very interesting research on sustainable marketing and social media, involving cross-culture populations (subjects) to analyze motives for sustainable behaviors. South

Koreans representing collectivist culture and USA, Germany being additional of individualistic culture, were studied supported their usage of Facebook and Twitter with relevant motives for sustainable behaviors. Using Kerman's (1958) functional motives as basic theoretical foundation, online Engagement pattern of users in survey method was used to cover the subjects belonging to different cultures. The conceptual model for this study tried to analyses how functional motives (responsibility, involvement and internalization) influence the sustainable behaviour such as, recycling behaviors, organic food purchase, green transport use, anti-materialistic views, and charity. **Kaini (1998)** Innovation of new technology i.e. vide internet, helps in opening the gate for marketers and do online marketing to realize their business goals.

### 3. STATEMENT OF RESEARCH

After the reform period there has been shifting changes in constructional trade of india. In India there is the 10.7% construction digital transformation. However the Policies of globalization and liberalization have opened up new avenues for construction Digitalization but several impacts have suffered in Indian construction in case of growth rate has turned lower than the growth in population as well as domestic prices of several commodities have turned higher than international prices. This study addresses the observed impacts of digitalization in construction trades/ markets.

### 4. OBJECTIVES OF THE STUDY

- To examine the Factors of digitalization in trading/marketing on construction industry in india.
- To studytheawareness of Digitalization in trading/marketing and its implementation.

### 5. RESEARCH METHODOLOGY OF DIGITALIZATIONTRADING:

#### 1. E-Trading:

#### A. Sales and Marketing:

- a) Established distinct sales and marketing role centers
- b) Sales force automation
- c) Enhance visibility across opportunity pipeline
- d) Automates marketing management
- e) Measurable campaign effectiveness
- f) Insights to customer needs and behavior

#### B. Trading Management:

- a) End to end secure and efficient tender bidding process
- b) Automated bidding process
- c) Controlled stage progression
- d) Accurate information flow
- e) Dynamic calendar utility
- f) Real time view of sales pipeline

#### C. Financial Management:

- a) Manage Cash flow
- b) Track cost variance
- c) Linking cost centers
- d) Adjust the unrealized revenue

#### D. Supply chain management:

- a) Integrated sales and purchasing Process
- b) Efficient demand and supply Planning
- c) Real time visibility
- d) Optimize inventory levels
- e) Improve forecasting

#### E. Asset Management:

- a) Help and Reduce Downtime
- b) Enhance floor productivity
- c) Maximizes capacity utilization
- d) Optimize total cost of ownership

#### F. Business intelligent:

- a) Single click access
- b) Automated multiple workflow processes
- c) Reduce overheads

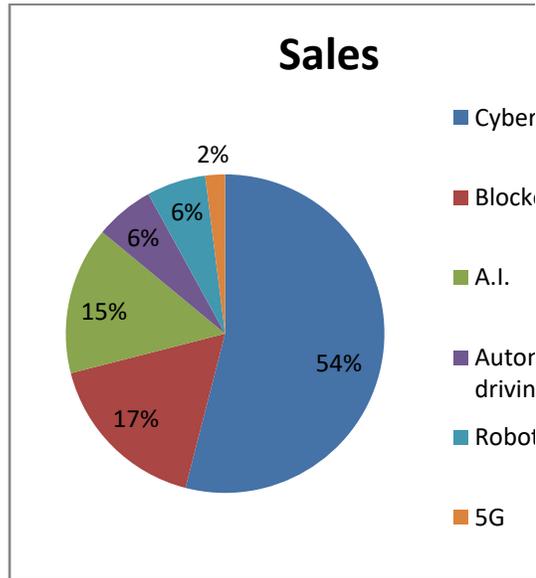


Fig. Digitalization and Solutions

## 2. Block chain Technology:

A blockchain can be seen as a technology which uses a distributed ledger meaning it is a Process of sharing and synchronized digitalized data geographically pull over across different sites countries or institutions. In other words, there is no central administrator or centralized data storage. The blockchain technology basically establishes a distributed public ledger that contain each transaction history in circulation. Using the bit coin as an example, the blockchain technology contain transaction statements of every bit coin, providing proof of who owns what at any given time. According to the technology can be explained in short through three different parts:

- (1) recording any type of transaction
- (2) validating the transactions
- (3) Change in a public ledger and authenticating transactions.



Fig. Block chain technology used in trading

### A. Transparency:

Accounting and particularly banking or associate system which will need an audit. Because the record of transactions is ineradicable, it will be a lot trusted. Elections may be a lot of just and traceable because the records would be much more troublesome to tamper with or take away. Storing ID records for independent self-governing of data, as is already being considered by the EU. Having demonstrable fairness. This is often a really revolutionary aspect for both online and offline vice. Would you rather play on a platform that was transparently honest or one wherever the rules were hidden and stacked against you? Because the online gaming economy is calculated to pass \$138 billion by 2019, we can be make sure that the transparency benefits of block chain are being smartly explored.

### B. Traceability:

#### a. Disrupting supply chain management:

Nowadays supply chains have become global, we tend to get and transport goods from one side of the World to another side of the World, and most of the time we are buying from companies

and other people who we don't even apprehend. If we tend to don't apprehend the people that who we are buying from, how are we supposed to expect that what they assert is 100% legit? Nowadays the only method is to hire 3rd party auditors and assessors to form certain that the products, materials or ingredients I'm receiving are really what they're presupposed to be. This is a very expensive process which is done normally on a non-digitalized method.

b. Data storage:

The second drawback with traditional supply chain traceability is that information is keep in one single purpose. This cause a risk to the complete supply chain participants because all the knowledge about their products and services are often taken and replicated. Let's imagine the case for the certification of a cotton t-shirt: the fabric dyer has shared his formula for a Cradle to Cradle compatible red dye, that he developed, the remainder of the participants during this supply chain had to do the same, all the information is securely keep on associate encrypted data within the assessor's location, however a hacker attack happens and this gets stolen. Years of work have been lost. With a distributed ledger this couldn't happen because the rest of the network wouldn't settle for that amendment on the ledger.

c. Data access:

Supply chain blockchains are normally built on a way that the participants, depending on their roles, have access to just certain amounts of data. The key distinction is that currently information will flow simply to the Block chain and then be verified by the Cradle to Cradle assessor. If, as an example, the dye supplier had suddenly changed the formula, the assessor could receive a notification. Then it would be needed to verify the ingredients are still compliant and re-approve the certification. It adds a replacement layer to own live certifications rather than time-stamped ones because the data is constantly flowing to the distributed ledger and constantly being verified by the participants.

**C. Smart contract system:**

A smart contract could be computer protocol intended to digitally facilitate, verify, or enforce the negotiation of a contract. A smartcontracts enable the performance of credible transactions without third parties. One of the most effective things regarding the blockchain is that, because it's a decentralized system that exists between all permissible parties, there's no need to pay intermediaries (Middlemen) and it saves you time and conflict. Blockchain having their issues, however they're rated, undeniably, faster, cheaper, and safer than traditional method, that is why banks and governments are turning to them.

**D. Digitalize Currency:**

From the aspect of the development of e-payment technique, digital currency isn't physically printed by the Central Bank. For now, digital currency is taken in to account with its own rules of the game. In the literature, all those that support the use of Bit coin underscore the characteristic as a currency that doesn't cause monetary crises. Namely, the view is that banks will print extra money to cover their national debt, thus devaluing their currencies, Bit coin doesn't perform in such a way.

**E. Integrated supply chain:**

a. Establishing trust:

Establishing trust between all participants is essentially to the effective supply chain functioning. In a Block chain, each participant includes a copy of a ledger and knows where each item originated. Everybody has access to information about who has owned it before and when. A world-famous brand Nestle could be a nice instance of Blockchain in a food supply chain. It's already using Block chain to monitor the provenance of food ingredients in many products. On the other hand, Blockchain enables customers to see the provenance of goods — from the supply purpose to end consumption

what permits. It helps establish trust between a target market and a brand.

b. Consensus and permission:

Block chain is commonly explained as “one version of the truth” for every product. It’s a system of records that’s aimed to capture proof of money transactions like bills of lading and money transactions. It covers all stages of the supply chain – from serialization, and shipping to receiving and installation – each is tracked automatically. This technique is absolutely built on principles of trust, transparency, and audibility. All participants have access to an equivalent information. In case, if one among the participants endeavors to act fraud, then he/she is automatically out of set with a system and known as a threat. It works as an efficient deterrent to malware behavior.

c. Transparent transactions:

Now all transactions are often maximally transparent anywhere globally – no need to use ancient banking. Cash transfers can be easily made between a payer and payee within a few minutes. You need no longer wait for days since with a Blockchain-based system, and everything happens much faster and safer. Tomcar is a superb example of this solution. This vehicle manufacturer uses Bitcoin to pay to its suppliers and makes all agreements with them based on normal terms. The advantages of using Bitcoin is within the cost savings. Even though the company tries not using too much Bitcoin, it considers crypto currency as a great solution that allows significantly saves costs. However, crypto currency is international; some governments have started finding it as an innovative manner for organizations to invest.

d. Monitoring of product conditions:

Some variety of products, like food or medicines, are susceptible and have specific needs. The product storage conditions, like temperature, humidity, or vibration, can be recorded by

sensors and stored on a Blockchain. If one among the parameters deviates from a norm, then it’ll be immediately tracked by the Blockchain participants. During this case, a smart contract will automatically solve a problem by triggering required actions.

e. RFID Tags:

Nowadays, companies actively use RFID tags to store data regarding about products in supply chains. Commonly, they’re automatically processed by IT systems and used for sensible contracts in logistics. RFID-tags for cartons or pallets preserve information about the location and date of delivery. Logistics partners use specific apps to look for these tags and bid for a delivery contract. The partner giving best optimal price and service gains a deal. After this, a wise contract will monitor the status and final delivery performance.

f. Blockchain Traction in the Supply Chain:

Many companies face the challenge of very complicated supply chain management conjointly weakens other internal processes. However, Blockchain technology has the potential to solve important glitches in traceability and surveillance along the chain. It enhances potency across all operations of the flow of products, information about the storage and shipping of raw materials, delivering finished goods from one purpose to another, and more. The results are a larger collaboration, efficient inventory management, better asset usage, and more.

## 6. FINDINGS:

### A. Challenges before digitalization in constructional trade in india

The above analysis point of view there is a significant growth in the constructional growth within India. But the percentage share of the constructional trade has been decline within the post reform period hence there is need to solve the challenges before digitalization in India’s

constructional trade. The following are the challenges are found in this study.

#### **B. Sustainable and innovative Supply Chain management using Block chain Technology**

Various innovative supply chain has been come upon to fulfill the challenges of product shortage and financial condition in India. So as to face the import and export challenges, new market control constructional trade. Similarly technology and sensible contract system conjointly digitalization.

#### **C. Dependency on market size**

Constructional Products in India is mainly depend on market and therefore, heavily depends on market. Growth within the historic period resulted from reboots economic growth in emerging markets, low interest rates in most developed countries, increasing the demand for senior friendly infrastructure and technological development. Factors that negatively affected growth within the historic period were geopolitical tensions, and rising material prices.

#### **D. Price fluctuations**

The Demand constructional commodities in international market have systematically flexible. The construction industry is facing serious problem of price fluctuation in all of its inputs. This major problem is spread everywhere the country and Nepalese contractors are critically affected. The main objective of the research is to investigate the effect of price fluctuation for improving the financial capacity of Nepalese contractors to boost the performance of the industry. Questionnaire, scheduled and case studies ware accustomed assess the contractor's perspective. The research result shows that the matter of price fluctuation happens in arandom manner.

#### **E. Smart Contracting for documentation Process**

A smart contract may be a computer protocol meant to digitally facilitate, verify, or enforce the negotiation or performance of a contract. Smartcontracts permits the performance of credible transactions without third parties. One of the most effective things concerning the block chain is that, as a result of it's a decentralized system that exists between all permissible parties, there's no need to pay intermediaries (Middlemen) and it saves you time and conflict. Block chain have their issues, but they are rated, undeniably, faster, cheaper, and safer than traditional systems, that is why banks and governments are turning to them. Additional extra documents like certificate of origin and review certificate is also required as per the case.The important regulatory documents include:

- Accounts and Transactions
- Storage, Memory and the Stack
- Instruction Set
- Message Calls
- Delegate call / Call code and Libraries
- Logs and Creates

#### **7. SUGGESTIONS:**

1. It is need for change in the supply chain pattern and construction based industries for production of Cement and steel to reduce that import of commodities and government should provided appropriate facilities in the domestic market.
2. In india has a large potential to increase constructional exports so first it needs to undertake large infrastructure investment in constructional process industries and research development.
3. It should develop the smart contract system in India's constructional trade to Improve constructional trading activities i.e. transportation, warehousing, Procurement

process etc. to the importers and exporter of the state.

#### 4. CONCLUSION REMARKS

The overall research paper has concluded that the constructional trade is different from other trades and plays a significant role in the economy development of a nation, India's prosperity depends upon the constructional prosperity. There are many kinds constructional products produce in india and the marketing of all this firm products generally tends to be a complex process. The digitization in the constructional trade has been increasing steps towards the digitalize diversification in the constructional market/trade. The contribution of technologies is important for the india economy for making powerful and stable Indian economy.

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