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Implementation of innovation in the supply chain: An observational study

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Abstract

Aims & Objectives: The present study was undertaken for assessing the implantation of innovation in the supply chain.

Methodology: A survey was done to understand the problems of the companies in implementation of the innovation in the field of supply chain. The survey was conducted with the help of a 27 association (“Contractor Welfare Association”) that aims to address the problems of the contractor from all over the state. The purpose of the implementation of framework was to test the feasibility of the model as well as making changes for the improvement. For the implementation of model a project with short duration (30 days) was selected. Before implementation of the framework, a detailed KPI analysis is done for the project that will be compared to the post implementation and conclusion can be derived.

Results: After the implementation of the innovation in the supply chain through the framework, it was necessary to do the reanalysis of the KPI that were set prior to start of the project. With the implementation of the innovation framework it was observed there was considerable change in the overall project cost. The time invested in the construction of the project was compared with the standard construction time. The total quantity required for the construction was 500 meters (345 cubic meter of brick work). The satisfaction of the client also proved to be crucial for the construction of the bigger scheme.

Conclusion: Thus, it can be concluded that innovation is possible in many different ways and the first step in the process of innovation is to understand the need/driver for innovation and what is the problem associated with it.

Keywords: Implementation, Innovation, Chain

Introduction

Innovation is a new and fresh advancement to bring in new and developed outcomes. When any individual or a unit identifies an object, a practice or an idea as new or latest and adopts it, such can be said to be innovation. It is described as the process using which a new idea or concept is acquired from the segment of idea through to the market and further more. The idea of innovation is a wide one which is comprehensive of the enhancements that happens in items, services or procedures^[1-3].

Innovation in business is thus important in any industry of business; however, it is significant for the effective way of implementing innovation. It always initiates from the recognition of the areas or fields in the business which requires improvement and gradually plan for implementing the required innovation in the business so that the business can develop towards gaining competitive advantage in the competitive global market. Achieving unique features and advantages over the competitors of the market can only be achieved through implementation of innovation in the business functions or operations which would eventually help the business to reach to a sustainable state^[4-6]. Hence; the present study was undertaken for assessing the implantation of innovation in the supply chain.

Materials & Methods

A survey was done to understand the problems of the companies in implementation of the innovation in the field of supply chain. The survey was conducted with the help of a 27 association (“Contractor Welfare Association”) that aims to address the problems of the contractor from all over the state. In the survey, 21 construction companies have taken part and provided the feedbacks about their problems. This proved to crucial information while making a framework that will lead to the implementation of the innovation in the field of supply chain. The question asked in the survey is listed below:

The purpose of the implementation of framework was to test the feasibility of the model as

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well as making changes for the improvement. For the implementation of model a project with short duration (30 days) was selected. Before implementation of the framework, a detailed KPI analysis is done for the project that will be compared to the post implementation and

conclusion can be derived. While implementing the model for the implementation of innovation in the project, possible risk analysis and mitigation plan was also created for the case of emergency.

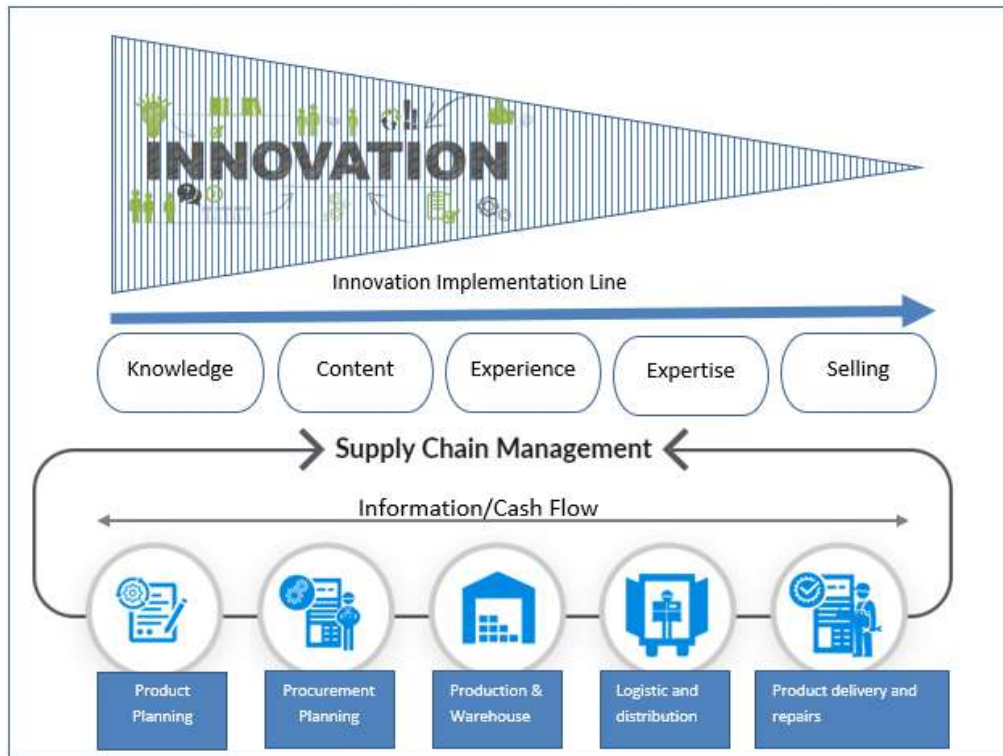


Fig 1: Innovation implementation framework in supply chain

Discussion

As the idea for construction was new, the company invested time in doing the proper coordination (by organizing the meetings) within the teams in the company as well as involving the engineers from the state water department and the team from World Bank. All the communication was done through the registered post (as prescribed in the tender document) and it was also well recorded. During the site visits of the client all the instruction given were recorded in a "Site Instruction Register", which proved to be crucial in implementing their instructions. By the end of the project the feedback from the client was also recorded for the future projects. Thus, the information flow in both the direction were monitored and managed efficiently^[4-6].

Taking initiative for driving innovation: Efforts should be made for keeping the level of innovation high by accepting and appreciating the innovative approach for any product or service. For the implementation and the development of innovation in any company or organization it is important that it is supported by the senior employees and managers. The company (Bandhu Enterprises) have supported the innovative approach of implementing the innovation even though it has the option for going with the conventional method of construction. This supported helped the technical head in leading the program and being profitable at the completion of the project^[7-9].

Involvement of the customer while planning the product: It is very important to involve the customer while planning the project specially if the project is contract bases. The project worked on was also a contract base and all the specifications

of the construction was mentioned in the contract, thus for changing the specification many measures were taken including the collaborating with the university professor for technically approving the new method of construction. Further prior to the start of the construction approval in written were also taken form the client for avoiding any conflict during and after the construction^[8-10].

Utilization of the resources: The management of the resources is a key element in deciding the profitability of the project. In the project, the company had utilized its warehouse at Lucknow for the production of the product because of the availability of the resources. Due to the manufacturing at Lucknow (centre of the state), the availability of labour proved crucial in completing the production within time^[10].

Cost Management: Cost plays a big role in the implementation of the innovation as it also defines the acceptability of the innovation. In the project cost was controlled without compromising the quality of the construction by changing the material for construction and choosing the Lucknow warehouse due to availability of cheap labour. The cost of the project could have also increased if the company have invested in buying the trucks for the transportation of the blocks from Lucknow to the site, but instead the company decided to have a collaboration with the 3PL for quick transportation service at low price. For the company cost saving was a key indicator in deterring the success of the implementation of the innovation^[11].



Fig 2: Standard supply chain for the project



Fig 3: Modified supply chain with innovation framework implementation

Results

After the implementation of the innovation in the supply chain through the framework, it was necessary to do the reanalysis of the KPI that were set prior to start of the project. The reanalysis is carried is as follows:

of the innovation framework it was observed there was considerable change in the overall project cost. The key differentiator were the reduced material cost due to use of new material with centralized production and labour cost. Hence the overall profit margin of the project was increased form 15% to 23%.

Reduction of overall projects cost: With the implementation

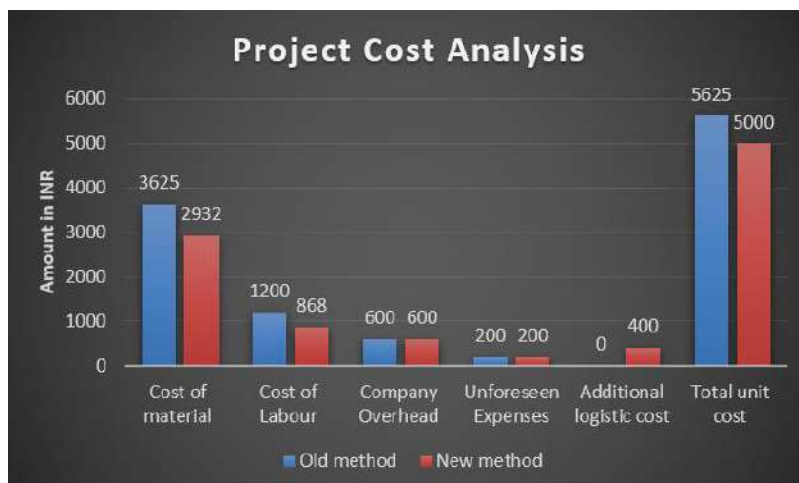


Fig 4: Project cost comparison statistic

Time required for completing the project: The time invested in the construction of the project was compared with the standard construction time. The total quantity required for the construction was 500 meters (345 cubic meter of brick work).

It was observed that the new method of construction was much faster than the conventional method of construction. This new method has saved around 28% time required for the construction, thus avoiding any penalties due to delay in completion of work.

Satisfaction of the client: The completed project was a success in terms of client satisfaction. As the client was also involved in the implementation process since the beginning hence it provided a better mutual understanding and trust between the company and the client. The final constructed boundary wall was properly given the final touch and finishing by the company making it more convenient for the client. The satisfaction of the client also proved to be crucial for the construction of the bigger scheme.

Production time for old method of construction (estimated)		
Work	Qtt	Unit
Production capacity	0.8	cum/hr
Production in 1st shift of 8 hrs	6.4	cum
Production in 2nd shift of 8 hrs	6.4	cum
Total production per day	13	days
Total days required for production	27	days
Material procurement	2	days
Total days required for production and construction	29	days

Production time for New method of Production (Implemented)		
Work	Qtt	Unit
Production capacity	3	cum/hr
Production in 1st shift of 8 hrs	24	cum
Production in 2nd shift of 8 hrs	24	cum
Total production per day	48	cum
Total days required for production	7	Days
Total concrete setting time (7 days from last manufacturing date)	7	Days
Transportation time	2	Days
Laying and Jointing Time	5	Days
Total days required for production and construction	21	Days

Conclusion

Thus, it can be concluded that innovation is possible in many different ways and the first step in the process of innovation is to understand the need/driver for innovation and what is the problem associated with it. If the problem is understood properly the dealing with innovation would be much easier. Moreover, for implementing innovation in the field of supply chain, step by step strategy should be made as each of the segment of supply chain are dependent on each other and modifying one will also have impact on another segment. Hence while making the strategy all the segment the supply chain should be addressed individually.

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