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## Article

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**International Journal of Technology for Business (IJTB)**



**Lessons From Applying Project Management Techniques In A Ready Made Garments Business**

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**Abstract**

Export oriented clothing sector in Bangladesh, popularly referred to as the Ready-Made Garments (RMG) industry is one of the heavily utilized sourcing hubs for the international clothing retailers and brands. Most of the international retail chains have a local sourcing office tasked with procurement, quality management and logistics issues signifying the importance of Bangladesh as a sourcing hub for the international clothing industry. The nature of the relationship between the international buyers and the local RMG manufacturers is transactional and ad-hoc. The international buyers manage each order with traditional operations processes such as merchandizing, procurement, quality management, shipment and transportation etc. This research using an illustrative case based on a case study argues that performance and overall competitive advantage of all the stakeholders can be improved if individual orders are taken up as project and existing project management knowledge, skills and tools are used. The benefits can be in terms of overall cost minimization, reduction in lead-time, improved efficiency and productivity among others.

*Keywords:* Project Management, Ready Made Garments, Case Study, Supply Chain Management, International Clothing Industry, Action Research

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## **1. Introduction**

The export-oriented apparel industry of Bangladesh, popularly known as Ready Made Garments (RMG) or the garment industry occupies a dominant position in the economy of Bangladesh. It is the largest exporting industry, which experienced a phenomenal growth during the last three decades. This single sector alone earns about 80% of yearly foreign exchange of the country (Khosla, 2009 and Gereffi, 1999). RMG manufacturers are also often plagued by issues related to wastages and resultant cost increase. In addition, managing quality, enhancing employee morale and improving the flow of material, people and information are also major concerns for organizations. All these and other related factors lead to drop in productivity and overall inefficiency (Melton, 2005; Lewis, 2000; Antony et al. 2003). The problems faced by individual organizations are often propagated to the supply chain. As a result, wholesalers, manufacturers, retailers, distributors, suppliers, third party service providers (3PLs) and other stakeholders involved in the supply chain find it difficult to reduce and balance their costs, time and inventories, which creates challenges for the manufacturers in meeting customer's demand.

A way to mitigate the problems faced by RMG manufacturers can be to manage individual orders as a project. The concept of project is a temporary endeavour undertaken to create a unique product, service, or result; whereas project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements (Turner, 2014). This research investigated the use of project management in a RMG manufacturing firm in Bangladesh. Organizations in many sectors such as software, construction, research and development, and other general business areas have started conducting regular operations as projects (Kerzner and Kerzner, 2017). Project management includes various knowledge areas, process groups, tool and techniques approved by the Project Management Institute (PMI) which is an international professional society for project managers (Harrison and Lock, 2017).

## **2. Materials and Methods**

As mentioned in the previous section, RMG manufacturers in Bangladesh are facing many problems that can potentially be reduced if customer orders are conducted as projects. The investigated manufacturer is referred to in this paper as the focal company. An order from an important international customer which is a well-known retailer is used as an illustrative case to prove the concept.

This study adopted action research to achieve the objectives. Action research methodology has evolved over the years and can be defined as "orientation to knowledge creation that arises in a context of practice and requires researchers to work with practitioners" (Bradbury-Huang, 2010). A member of the research team was attached for the entirety of the project with the organization under investigation. During this period, the researcher observed and executed various business processes and practices of the RMG manufacturer. In this regard, the researcher attended meetings, interacted with external stakeholders, conducted routine activities and analyzed documents. The data and information gathered were later qualitatively analyzed.

## **3. Results**

The focal company in this research conducts its activities using traditional operations processes such as merchandising, production, purchasing and procurement etc. Following discussion provides an understanding regarding the regular operations and the business environment the organization finds itself. The company mainly exports its products to Europe and United States. In addition, it exports to Korea, Japan and Australia. The company's major clients include world leading clothing brands and retail outlets. The focal company also has its own suppliers and sub-contracting companies. It sources fabrics from the local market, China, India and Taiwan. In addition, the company needs suppliers for Trims- button, pocketing, interlining, zippers etc. The company

usually manages customer orders on ad-hoc basis. Once a customer communicates regarding a potential order, the dialog is taken over by the merchandising team of the focal company and the team would analyze trims related information such as button, pocketing, interlining, zipper etc. This team would then communicate with its own supply partners regarding sourcing of fabrics, trims sub-contacting etc. They will also communicate internally with the production unit regarding current capacity and existing orders. In the case of some contracts, the customer may impose a restriction on where the focal company can source the required fabrics. The specification or the design of the product is in most cases sent by customers in the form of a technical pack which includes fabrics, color, sewing, details like positioning of buttons etc. The technical pack generally also includes a CAD (Computer Aided Design) file and even a sample physical product at instances. Once the order is confirmed the production process starts. Quality management is ensured by the customer and the focal company using in process and before delivery inspections. However, the focal company with its existing methods faces many challenges including difficulties in quality management leading to high rate of rejection; issues with lead time resulting in fines and dissatisfied customers; communication breakdowns; productivity and efficiency problems.

### *3.1 Illustrative case*

The focal company as a test case decided to use project management approach to process an order from a large international customer. The project titled “Beckham Trouser” is a product with an order quantity of 1 million pieces with a selling price of \$8.25/unit. The focal company is estimated to make a profit of \$1.20 per unit after accounting for all related expenditure and overhead cost.

#### Scope and Charter

As per project management principle, the charter was created which is a document that formally authorizes the project and provides the project manager with the authority to apply organizational resources to project activities. It further outlines the scope, objectives and participants in a project. The scope of the projects agreed are as follows a) the product should be based as per the customer’s advised quality; b) the materials and trims should be from sustainable sources prescribed by the customer c) the factory and mill which will produce the supplies should be approved by the customer d) shipment should be on time e) the price cannot be increased until or unless buyer makes any change to the product f) product quality inspection should be passed by designated quality controllers g) all required test parameters should be passed before shipment h) packing and mode of transport should be executed as per customer’s requirement.

#### WBS

Work Break-Down Structure (WBS) was developed by the project team in consultation with the customer. WBS is the process of subdividing project deliverables and project work into smaller, more manageable components. Figure 1 illustrates the WBS created for the project. The project is divided into six Work Packages (WP) which included Project Initiation (WP1/ M01); Planning (WP2/ M02); Materials and Trims Sourcing (WP3/ M03); Product Manufacturing (WP4/ M04); Inspection and Shipment (WP5/ M05); and Project Closing (WP6/ M06). Under the level 1 activities/ WP there are sub-activities (Level 2). For example, the Planning (M02) activity includes sub-activity such as sample planning (2.1); material procurement planning (2.2); production planning (2.3); and shipment (planning). Level 1 activities, Materials and Trims Sourcing (M03) and Product Manufacturing (M04) are estimated to last the longest duration which is 30 days. The entire project duration is 84 days. One should also note that activities within the project often have dependencies. In this project level 1 activity Project Initiation (M01) is a predecessor to activities Planning (M02) and Materials and Trims Sourcing (M03); whereas the activity Product Manufacturing (M04) has predecessor Planning (M02) and Materials and Trims Sourcing (M03). It should be mentioned that an activity with dependency can only be started once the predecessor activity is finished.

| Division                          | Sub Division                        | Work Packages   | Predecessor   | Duration( Days) | Target Date |
|-----------------------------------|-------------------------------------|---|---------------|-----------------|-------------|
|                                   |                                     |   | Project Start | 84              | 16-Mar      |
| M01                               | <b>Project Initiating</b>           |   | NA            | 20              | 5-Apr       |
|                                   | 1.1                                 | Marketing & Invitation for Factory Visit                                    |               | 3               | 19-Mar      |
|                                   | 1.2                                 | Factory Visit & Business Profile Check                                      |               | 2               | 21-Mar      |
|                                   | 1.3                                 | Sample Development & Approval   |               | 10              | 31-Mar      |
|                                   | 1.4                                 | Order Confirmation / Project Approval                                       |               | 5               | 5-Apr       |
| M02                               | <b>Planning</b>                     |   | M01           | 6               | 11-Apr      |
|                                   | 2.1                                 | Sample Planning   |               | 1               | 6-Apr       |
|                                   | 2.2                                 | Material Procurement Planning   |               | 2               | 8-Apr       |
|                                   | 2.3                                 | Production Planning   |               | 2               | 10-Apr      |
|                                   | 2.4                                 | Shipment Planning   |               | 1               | 11-Apr      |
| M03                               | <b>Materials and Trims Sourcing</b> |   | M01           | 30              | 11-May      |
|                                   | 3.1                                 | Supplier development  |               | 5               | 10-Apr      |
|                                   | 3.2                                 | Fabrics, trims & Accessories Approval                                       |               | 3               | 13-Apr      |
|                                   | 3.3                                 | Material Booking  |               | 2               | 15-Apr      |
|                                   | 3.4                                 | In-house to ware-house  |               | 20              | 5-May       |
| M04                               | <b>Product Manufacturing</b>        |   | M02 & M03     | 30              | 10-Jun      |
|                                   | 4.1                                 | Pre-Production Activities-: Size set, PP Meeting, Trial Run & Bulk Approval |               | 7               | 12-May      |
|                                   | 4.2                                 | Bulk Cutting  |               | 2               | 14-May      |
|                                   | 4.3                                 | Bulk Sewing Production  |               | 15              | 29-May      |
|                                   | 4.4                                 | Line Quality Check  |               | 1               | 30-May      |
|                                   | 4.5                                 | Wash Production   |               | 2               | 1-Jun       |
|                                   | 4.6                                 | Finishing & Packing   |               | 2               | 3-Jun       |
|                                   | 4.7                                 | Final Quality Check   |               | 1               | 4-Jun       |
| M05                               | <b>Inspection &amp; Shipment</b>    |   | M04           | 2               | 2-Jun       |
|                                   | 5.1                                 | Pre-final Inspection by Own Quality Team                                    |               | 1               | 5-Jun       |
|                                   | 5.2                                 | Inspection offer to Buyer Quality Team                                      |               | 0               | 5-Jun       |
|                                   | 5.3                                 | Final Inspection & reporting  |               | 1               | 6-Jun       |
|                                   | 5.4                                 | Goods Ship to Port  |               | 0               | 6-Jun       |
| M06                               | <b>Project Closing</b>              |   | M05           | 2               | 8-Jun       |
|                                   | 6.1                                 | Documents & LC submission to Bank   |               | 1               | 7-Jun       |
|                                   | 6.2                                 | Payment receive   |               | 1               | 8-Jun       |
|                                   | 6.3                                 | Closing Documents & Mail.   |               | 0               | 8-Jun       |
| MINIMUM TIME DURETION OF PROJECT= |                                     |   |               | 84              |             |

Figure 1. WBS of project Beckham Trouser

Use of Critical Path Method

The project utilized a project planning tool named the Critical Path Method (CPM). It is a network diagramming technique used to predict total project duration. A critical path is the series of activities that determine the earliest time by which the project can be completed. The longest path or the path containing the critical tasks determines the completion date for the project. Figure 2 illustrates the network diagram of the project “Beckham Trouser”. The network diagram indicates that M01, M03, M04, M05 and M06 are critical activities in the project and cannot be delayed; whereas activity M02 can potentially be delayed by 6 days. Figure 1 further articulates the earliest start date (top left), latest start date (bottom left), earliest finish (top right), latest finish date (bottom right), slack/ possible delay (bottom middle) and activity duration (top middle) of each of the level 1 activities. For example, activity M02 can start at the earliest on day 21 and the latest at day 26 of the project, i.e. it can start at any day within this range. The duration of the activity is 6 days and the maximum potential delay is also 6 days.

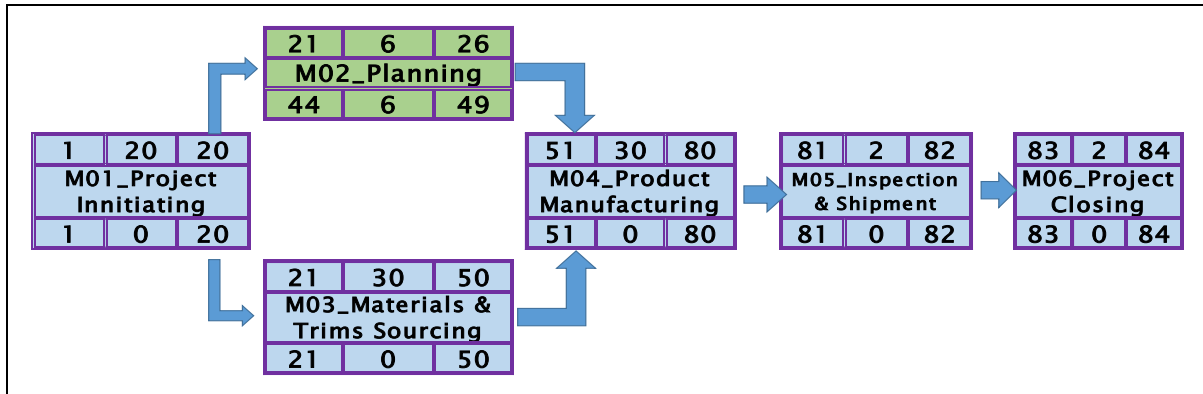


Figure 2. CPM of Beckham Trouser

Resource levelling and status reports

Project cost management techniques such as estimation, budgeting and control were diligently applied. The creation of WBS allowed the project team to develop accurate approximation of the costs of the resources needed to complete the project activities and aggregation of cost for work packages. Project control tools such as periodic project reports helped to influence the factors that create cost variances and control changes to the project budget. Table 1 articulates the activity (level 1) wise cost break down of the project. Periodic progress reports were create indicating the completion rate and resource consumption; hence any variance was quickly identified, and the problem mitigated.

Table 1. Budget of the project Beckham Trouser

| <b>Cost Center</b>        | <b>Cost Area</b>           | <b>Total Cost @USD</b> | <b>Total Cost @%</b> |
|---------------------------|----------------------------|------------------------|----------------------|
| M01                       | Project Initiating Cost    | \$ 282,000             | 4.00%                |
| M02                       | Planning Cost              | \$ 141,000             | 2.00%                |
| M03                       | Materials and Trims Cost   | \$ 4,230,000           | 60.00%               |
| M04                       | Product Manufacturing Cost | \$ 2,115,000           | 30.00%               |
| M05                       | Inspection & Shipment Cost | \$ 197,400             | 2.80%                |
| M06                       | Project Closing Cost       | \$ 84,600              | 1.20%                |
| Total cost of the Project |                            | \$ 7,050,000           |                      |

**4. Discussion**

As explained in the previous section this research used project management methodology, knowledge and tools in managing a customer order. Such practices have shown significant benefits over regular operations methods traditionally employed.

Improved performance

The use of project management planning technique such as CPM has led to higher accuracy in activity wise time estimation and greater visibility on real-time resource consumption. The management clearly understood the number of days an activity can be delayed without impacting the project. This has resulted in a situation, where

lead time of the entire project has decreased by 10%. The number of rejection due to quality has reduced by 3%. Consumption of less resources and better control have resulted in an increase in productivity and efficiency.

#### Reduction in cost

As part of the initiative to use project management techniques and methods, WBS was created for the illustrative case. Use of WBS and subsequent cost levelling meant that the management had clear idea regarding the completion rate of the activities and ongoing cost incurred. Hence, any deviation in actual cost from the estimate were addressed quickly. As a result, total cost of the project was reduced by approximately 4% from usual.

#### Improved customer relationship

The use of project management by the focal company had a positive impression on the customer. As mentioned earlier, the international customers are large brands and retailers. For RMG manufacturers such as the focal company, the supply chain relationship is usually continuous one with customers; hence it is important for the former to gain trust of the latter. The use of project management to manage customer orders enabled the focal company to deliver the products in reduced time which helped the customer to reduce its own time-to-market. In addition, the focal company could present itself as more professional to the customer, thus enhancing the market reputation and trust of the RMG firm and increasing the prospect of future orders.

## **5. Conclusion**

This research has investigated the use of project management concept, techniques, tools in a Bangladeshi clothing contract manufacturer. A customer order was taken as an illustrative case. The research used various project management knowledge and tools such as charter, stakeholder management, scope management, WBS, deliverables, CPM, resource levelling among others. Managing a customer order as a project has shown significant benefits in terms of reduced lead time; minimization of cost; improved customer relationship; less rejection of final products on grounds of quality; productivity growth; and better utilization of resources resulting in increased efficiency. Based on the findings, the research suggests that RMG manufacturers should consider managing individual orders as projects. The top management of RMG manufacturers should allocate enough resources for imparting project management training to employees. It is advised that the initial cost on implementing project management practices would be more than compensated by the various benefits associated with project as illustrated in this paper.

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