

Changing for Win-Win

- Change Management on Global Value Chain Optimization

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Abstract—A GVC (Global Value Chain) optimization requires appropriate approach to make it happen, however, a good approach is not enough when the optimization requires a big changing throughout the chain. It is very important to have a methodology of change management during change processes for GVC optimization. This paper describes the principle of change management, and illustrates a case study on how to apply concepts of change management to obtain successful change for GVC project's achievement. Firstly, a brief literature review relevant to change management in a business environment is introduced. Some general methodologies and tools to make a change effectively are explained. A general GVC approach is reviewed. Next a case study of change management based on a GVC project is introduced, which conducts for three partners along the chain. Then, several critical success factors for buy-in changing are identified, which support the relevant people or group to accept the changing solutions. Then, actual result shows a success of buy-in changing throughout the GVC from the upstream suppliers to downstream customers. Obviously, the successful change management helps the GVC optimization project to make a win-win scenarios for all partners. Finally, the case study's findings are in line with in the field, the method of change management on a GVC project is concluded.

Keywords—change management, global value chain, buy in, critical success factors

I. INTRODUCTION

A value chain is a supply demand network including several partners, which is adding value for end customers. The partners are typically monitored with KPI (Key Performance Indicator) which is supporting the local optimization and downstream customers.

GVC (Global Value Chain) concerns the value-added focus with all partners, across entire supply-demand

networks. To do so, with given entire GVC, all partners need to work together more efficiently and effectively to create the maximum adding-value for each partner's customer and end consumer. As the GVC has such features, like with geographic distance, too complex to meet customer's expectation, so the performance optimization of GVC is needed. The change management of GVC can help each partner's changing along the chain. Besides the solution of optimizing GVC, one big challenge is how to help GVC in order to get buy-in changing solution from each partner to make changing, and gain better performance to meet the expectations from upstream partner down to end customers. A cooperative GVC project is a way that all partner work together to make optimization and changing happen, it provides an opportunity and enable partners to improve the relevance performance. However, an agreement of optimization or development together is just a first step of long journey for changing due to any change through complicated GVC must be not easy task compared with the solution of GVC optimization. For this reason, this study doesn't focus on the solution for optimization along chain, it aims to summary an important factor related to a success of change management to gain a win-win scenario from upstream suppliers to upstream customer based on a case study of GVC project.

The paper is organized as below. For the first, the concept of change management is introduced and reviewed. The challenges of adequately dealing with GVC and changing are discussed. Then, a case study is presented relating to the GVC optimization project within a given. A value chain structure across GVC are described with respect to an upstream partner (component factory) and its downstream (module factory and power product factory). With a proper change management activities corresponding CSFs (Critical Success Factors) integrated with project

management, great improvements for buy-in have been made by optimizing GVC, thereby affecting all partners along the GVC. The change management method and events for optimizing GVC have been applied by the involved partners to get project and changing acceptance, and great performance improvements have been achieved. As a result of changing, the significant improvements have resulted in a win-win scenario for both upstream factory and downstream factory across the value chain. The changing has helped the case companies to achieve greater levels of performance and more benefits. Finally, a summary and conclusion are made.

II. BRIEF REVIEW OF CHANGE MANAGEMENT AND CHALLENGES OF CHAINGE ACROSS GVC

A. Brief Literature Review on Change Management

Change is a common topic for any business during strong competition situation. In order to develop itself or adjust for competition, a lot of companies have implemented changes for improvement to stay in position under competitive markets. However, most of them have gained very limited benefit from change [1, 2, 3]. Obvious, changing and implementing new system or approach is not an inexpensive or risk-free venture, one proof from Michael Beer and Nitin Nohria's book in 2000 [2] "Breaking the Code of Change", it points out that nearly two-thirds of all change efforts failed. Moreover, a survey of more than 400 large and complex organizations, has shown that 90% of change programs have faced major difficulties in implementing change, the success percentage is as low as 10%, there is only one-third of successful changes can deliver the measurable business improvements as expected [3, 4].

To overcome the difficulties of changing, more consultants and practitioners have developed the supporting methods and tools for change management of companies. We present a brief literature survey of certain methodologies, tools and process with its elements in terms of change management.

In 1995, as a pioneer of change management, Professor John Kotter introduced an eight-step change process in his book "Leading Change" [5], which became famous "Kotter's 8-Step Change Model". As mentioned above, another well-known publication "Breaking the Code of Change" written by Michael Beer and Nitin Nohria in 2000, proposes an innovative approach for change management, and launched a debate on the merits and shortcomings of their two theories on changing: the first theory, i.e. Theory E, is based on economic value, and the second theory, i.e. Theory O, is based on organizational capability. They discussed more about the theory E and O in details in the paper. In the past years, even more, more research work have been made and contributed to change management, for instance, based on their research plus a review on previous outcomes from John Kotter [5], Michael Beer & Nitin Nohria [6], Peter Senge [7], J S Oakland and Tanner have proceeded a further research on successful changing, and have summarized four main points on change management [3]:

- 1) Leadership has a key role to play during change management.

- 2) Related to leadership, it is often linked to financial pressure.
- 3) Managing change also has its softer side, it is related to people. People within a company are the essential contributor to successful change.
- 4) Learning is one of the important point during changing.

Besides, the team development is also concerned as an important factor during changing. There are some models accordingly developed in the past years. Dr. Bruce Tuckman published his model [8, 9]. In 1965, his model points that team development during changing has to go through four stages, including: forming, storming, norming, and performing. He added a fifth stage: adjourning in the 1970s. According to Tuckman, the work effectiveness differs in different project's stages. When project team understand it, they can help team become effective more quickly. In terms of GVC project, Tuckman model can help project team to understand that why people behave differently at different stage, it will help them to get rid of resistance of changing.

B. Common Concept on Value Chain

Value chain is first developed in early 1979 by Professor Porter. He proposed this concept as decision support tools and added onto the competitive strategies paradigm [10]. Later in 1985, he first described in details in his book "Competitive Advantage: Creating and Sustaining Superior Performance" [11]. According to Porter, the value a company creates is measured by the amount that buyers are willing to pay for a product or service.

In the mid-1990s, the concept of GVC was first proposed for the upgrading prospects of developing countries or low cost country. In 1994, Gary Gereffi [12] described a process of almost 'natural' learning and upgrading for the companies in the Asian region. GVC concerns the value-added focus with all partners, across entire supply-demand networks that can be described as a framework.

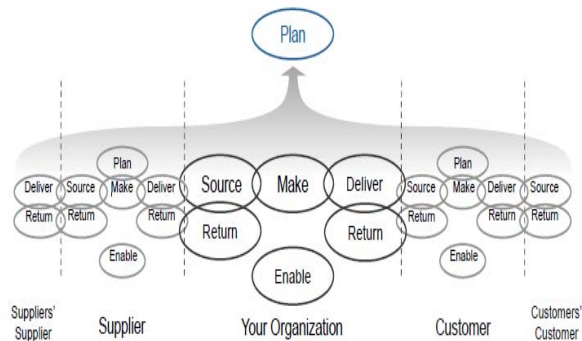


Figure 1. SCOR process

A value chain can be contained within a single geographic location or even a single firm. It can be defined as "the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical

transformation and the input of various producer services), delivery to final consumers, and final disposal after use” [13]. Using similar view, a global value chain is divided among multiple companies or industries with their geographic spaces that linked by business. According to SCOR (Supply Chain Operations Reference model) process (Figure. 1), which is proposed and managed by APICS (American Production and Inventory Control Society) SCC (Supply-Chain Council) (<http://www.apics.org/sites/apics-supply-chain-council/frameworks/scor>) [14], the first level of supply chain processes includes: plan, source, make, deliver, return, and enable. Therefore, GVC links includes activities such as process on supplier, supplier’s supplier, production, delivery to customer and customer’s customers across chain. In short, with given entire GVC, all partners need to work together more efficiently and effectively to provide adding-value to each partner’s customer and end consumer. To do so, all partners on GVC from upstream to end customer need to work together to optimize those performances, such as delivery time to end customer, OTD (On-Time-Delivery), inventory throughout chain. The case study below focuses on change management integrated to GVC project, and illustrates how the partners along a GVC to cooperate and improve its performance.

III. CASE STUDY

A. Description of GVC Improvement Project

Figure. 2 shows the GVC structure of the case study. There are three partners along chain: Factory A was a part supplier upstream, its direct downstream Factory B is a component supplier; C is downstream customer who is a power product’s supplier in Asia. Factory A and B factory are located in European, they delivery product globally, C factory is one of their important customer.

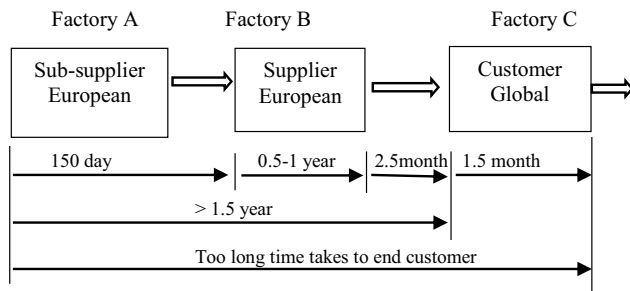


Figure 2. GVC structure with three partners on chain

The poor KPI performance is shown in Figure. 2. The project involves: 1) critical Factory A: part supplier who had long lead-time 150 days to B; 2) Component Factory B who also had long lead-time over 1.5 year to downstream customer C, and poor OTD that is less 60% averagely; 3) Power product’s Factory C who is selected as piloted customer bringing into project. All three partner agreed to work together towards to make a change for better performance. The overall goal of the project is to reduce the order lead-time and improve OTD to customer C.

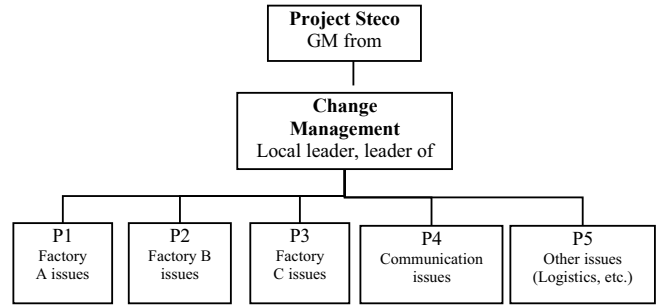


Figure 3. Project structure set-up

B. Project Structure

The project is set-up with different sub-project related to improvement areas and issues along GVC. The top two elements: project Steco (Steering Committee and “Change Management” govern all projects (see Figure. 3).

As described in Figure. 3, project Steco and Change Management are on top of other projects (P1, P2,...), which are most important to support buy-in and changing. This setup also corresponds with most important CSFs is illustrated next section.

C. Challenges on Changing to Optimize GVC

As mentioned in the last section, changing is a challenge for any single company. Any change for GVC’s improvement is even more difficult compared with a single company because GVC is more complicated, and change should be across several organizations. Major challenges on change management of GVC are listed as below:

- 1) How to get buy-in from each involved partners’ management and their major functions internally within value chain for improvement?
- 2) Communication through value chain both internally and externally.
- 3) Challenge on project management due to cross-organization, even cross-country or cross-continent (from GVC point of view).
- 4) How to take the “big picture” into account for improvement actions in the chain?

To overcome all above challenges, a systematic change management method and related activities should be defined for a success of changing. In next section, we describe a successful case of change management for performance improvement within GVC.

D. Key CSFs for Successful Change Management

Change management is a key to buy-in, project team implements the change management methods in the beginning during an assessment, CSFs of successful change management [2] should be identified as well, and then action corresponding with CSF needs to be followed towards success. In this case study, CSFs of GVC project is defined as blow.

- 1) Strong commitment from top management of each partners

Any successful implementations of change management requires a strong leadership, commitment, and participation from top management, GVC has even more requirement from this factor. In order to successfully implement change by GVC project, project team first need communicate with leaders of each partners, and gain their commitment to and support for the change effort. As executive level input is critical during analyzing current situation of GVC and re-thinking how to improve it, the project should have a Steco to completely support all changes. Steco members are from high management person from each partner (factory A, B, C). Steco should understand GVC approach, fully supports demands on the project. Project team takes into account of this requirement during project structure setting-up and build up Steco (see Figure. 3). Moreover, the project should be spearheaded by a highly-respected, executive-level project in each partners from factory A, B and C. All details is described in TABLE I.

2) Excellent project champion

A project champion is a key role to implement an improvement project. He/she should be the person within an organization implementing a project who takes on the burden of ensuring everyone involved is on board and behind the ultimate success of the project [10]. As GVC project is cross factory and cross country, even cross continents, it requires the champion is capable to coordinate different partners through chain besides his/her professional competences. The champion in this project is from factory B who is really understand concept of value chain and capable to communicate with internal functions and external partners. He is also eager to learn new things that improvement solution requires.

3) Excellent project management

Successful changing and implementing requires that the internally organization and partners externally through chain engage in project management. This includes a clear definition of objectives of project, development of both a PEP (Project Execution Plan) and a resource plan, and careful tracking of project progress following changing. Meanwhile, the PEP should create aggressive, but achievable, its schedule should be carefully defined to maintain some urgency and uncertainty in case it happens. A clear definition of project objectives and a clear PEP will help the organization specifically implement improvement action with less uncertainty. TABLE I shows a detailed activities accordingly.

4) Fully understanding of goals

All team members should fully understanding of goals of GVC optimization, its implementations require that all partners and project team create a clear, compelling vision of how each ones across chain work together in order to achieve win-win scenario. It requires to satisfy the customer along chain, empower and facilitate all partners (A, B, and C factory) during changing. There must also be clear definitions of goals and targets KPI (Key Performance Indicator) based on optimization, an expectation from customer and all partners as well, and deliverables from projects. Once the goals is agreed, Steco and project team must keep in mind during changing phase.

5) Fully open and timely communication on issues

Open communication is an important for almost all companies claim to value, but it is not easy to achieve. It is more crucial for changing on GVC. There must be more issues from how to optimize value chain and how to make change successfully from partners. During project, the relevance action needs to keep the lines of communication open, on-time and healthy (TABLE I).

6) Excellent consultants deeply involvement: external consultants are involved from the beginning

Consultant should be one of the most important CSFs and they play a unique role to drive successful change in organizations [3, 4]. The impact from consultants are not only provide and develop specific solutions of improvement, but also involve deeply on project management together with team. In terms of GVC project, consultant is a key partner for change management activities that support project implementation integrating with project management. The project is using internal consultant working with factory A, B, and C as facilitator for all defined improvement areas.

As stated above, they are major CSFs identified and play an important role to achieve GVC goals. The project team take into account of CSFs with relevant activity accordingly. TABLE I shows prominent activities corresponding with CSFs during project accordingly in order to achieve success of changing.

Besides, major CSFs, more detailed CSFs within each local team is defined as well on each sub-project, which will not repeat them here. Following section just pick up to emphasis on two important events that how change management happens and buy-in is obtained from upstream suppliers and component supplier internal production part.

E. Critical events for buy-in and changing

There are many detailed activities to help buy-in from people, among them, two remarkable events during project impacts key buy-in from upstream part supplier A and component supplier B, which are mainly supported by external consultants

1) Buy-in from upstream suppliers

One important events for change management is a supplier workshop. The purpose of the supplier workshop is to train the upstream critical participants about how important their lead time for information and lead time for materials. With helping and facilitating from consultants, the project team identifies and invites five critical supplier coming to supplier workshop (see Figure. 4) in factory B, who are with poor performance (lead time and OTD) to factory B. There are also more topics on workshop toward optimize KPI within GVC, necessary training session are defined for solutions. Besides solutions, one main target of workshop is to get buy-in: the suppliers see things in new way- not only focusing on the current ways of receiving purchase orders but finding something really new that will bring benefit for them. During supplier workshop, one topic is a simulation game (Beer Game) that helps all players of game to understand the effects of normal human behavior in value chain decisions and the importance of inventory management. In fact, two sessions of workshop are held.

First one is organized only with domestic suppliers in factory B, and second session is especially with major critical supplier-part supplier A. Both session are structured in the same way. It consists of pre-work, simulation game (Beer Game), training and discussions and new solution negotiations in the end of session.

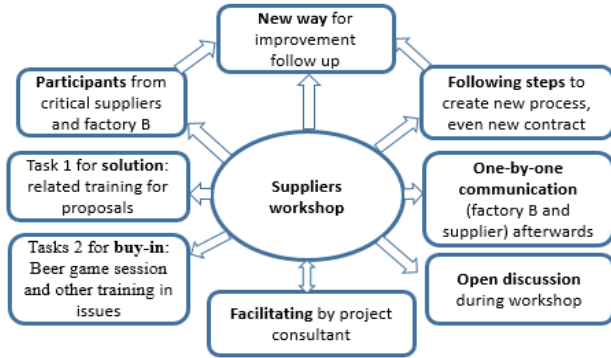


Figure 4. Supplier workshop structure

There are a lot of positive feedback from the supplier workshop: based on learning from the relevant training and discussion, the suppliers are willing to take the next steps concerning changes for improvement in purchasing methods. Moreover, the local team (factory B) has been encouraged by good feedback from its supplier and start to create a new process to work with those suppliers in order to implement the new way. From project point of view this event takes the project rapidly towards achieving the goal: all partners invited to workshop really make good improvement after buy-in. After implementing solution, factory B its lead-time reduces from 150 days to 70 weeks based on internal improvement.

2) Buy-in from internal people

At the beginning, the production manager and some people from shop-floor in factory B strongly against changing as he is very worried failure of change. Therefore, another important remarkable events for buy-in is using designed simulation game to train production people internally. The purpose of the training get buy-in from production people to accept new idea of control WIP (Work-In-Process) on shop-floor. Again, with helping and facilitating from consultants, local project team in B invites major production people to come to training and playing game together.

One main target also is to get buy-in: people is able to see things in new way- control and reduce WIP to decrease production lead-time. Similar with supplier workshop, it needs pre-work, simulation game preparation, training and discussions and new solution in the end of session. The results from the events is surprisingly positive: all involved people learn new idea to decrease production lead-time by new way to control WIP, and they are willing to cooperate to pilot solution on production line. After buy-in, the production people apply new way, as a result, they decrease WIP over 30% on the piloted line. This event also contribute

to project goal: reduce production lead time and improve OTD to customer C.

IV. ACHIEVEMENT AND LEARNING ACCORDING TO CHANGE MANAGEMENT

This study describes a successful story on GVC optimization. The achievement both from optimization and change management are made. The targets of KPI are researched (See TABLE II). The case study proves that, without change management it might be impossible to buy-in the solutions of changing, or changing may take even longer time. The three partners have realized importance of communication and co-operation to solve their problem to achieve win-win scenarios for all.

TABLE I. PRIMARY KPI

#	KPIs	Before	After	Definition
1	OTD to C	55% → 95%		On-time-delivery from factory B to C
3	L/T to C	1 year → 6.6 month		Average lead-time from factory B to C
4	L/T to B	150 → 100days		Average lead-time from factory A to B
5	WIP in B	Reduction 30%		Work-in progress in factory B
6	No. new improved contracts	5 suppliers of B		Number of improved contract between factory B and its suppliers
7	Order handling L/T in A	50% reduction		Average lead-time on order handling from factory A to B

Some learning from this study could be summarized on change management as below:

- 1) In order to avoid falling into failure of changing project, the success of change should be achieved with a integration with change management.
- 2) CSFs: it is very important for successful change and needs to be identified within the defined activities accordingly, and breakdown to details during the project's stages.
- 3) Key event to speed up: it need define some key events for important changing, such as supplier day for GVC project to get buy-in rapidly. These remarkable events may impact significantly for success and overcome the obstacles occurring on different project stage.
- 4) Special ways: it is obviously that special training game could be a good way to buy-in change. It can be widely reused for improvement project.

Further research on change management for cross-organizational value chain optimization could be extended by:

- 1) Researching and defining a suitable measurement specifically to success of changing management, i.e. find appropriate performance to evaluate different grade of success of changing.
- 2) How similar application can be used to cross-organizational improvement project? It would be

some process need to be followed, such as CSFs in the similar situation at beginning.

V. CONCLUSIONS

This paper describes the concept of change management and its application for one case study on GVC optimization. The case study shows the great impacts of change management on successful changing and buy-in from all partners on GVC. It is clear that shows that the change management concept supports GVC project to achieve great performance improvement by people's buy-in and deeply engagement. Without change management application on GVC project, there might be limitation of success of changing across GVC. The learning from case study might be extending to similar changing across some companies, countries, even continents.

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TABLE II. KEY CSFs WITH ACTIVITIES

#	CSFs	Key activity accordingly
1	Strong commitment from top management	<ul style="list-style-type: none"> - Top management from each of three partners (A, B, C) on chain should support GVC project with resources, B is major leading local team. - Commitment demonstrated by the time and money to make engagement from each. - Inside each partner on chain, all sponsors from each relevant functions from each partner internally should support changing internally, such as: workshop, training, and employee's engagement, etc.
3	Excellent project champion	An capable person from factory B is assigned as project champion who fully understand overall process upstream and downstream, and be capable to lead global project
4	Excellent project management	<ul style="list-style-type: none"> -Applying a systematic project management model and following each steps for improvement project. Project management model has a schedule and defines several phases with relevant checklists on each milestones. - Monitoring and controlling the project by regular weekly meeting and management Steco meeting.
5	Fully understanding of goals of project	<ul style="list-style-type: none"> - Following an effective GVC approach to analysis, define direction of solution and define detailed solution together with all partners - Benefits of GVC optimization identified and analysed together the organization internally and externally from each factory
6	Excellent consultants	Consultants are involved from the beginning with an on-site assessment in located different partner's factory, and deeply involving project management until project closing
7	Fully open and timely communication	<ul style="list-style-type: none"> -Weekly project meeting for regular communication - Consultants regular visiting to support face to face - Local leaders keep in touch both interanlly and externally in case of any project issues