Management Project

Mold & Co in China

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Introduction

This document describes all aspects of the ChineseTooth project which the main goal is to install IT systems around the new production line in the eco-city of Taijin. This project includes a social and ecological aspect in order to fit to the requirements of Taijin city guidelines.

In this document, we describe what are the goals, the processes, the planning and the risk of such deployment in China.

Project description

The main goal is to install a toothbrush production line in the eco-city of Taijin in China. Our company is workig for MOLD & Co. to make this production line a reality.

Ou main guidelines in this project is to install a production line that can produce a great amount of toothbrushes within an eco-city. This project needs to be respectful of the surrounding environnement and social aspects of the project's stakeholders.

2.1 Specifications

This project has to achieve the following specifications.

The production line must contains all the required machines to automate the production of toothbrushes. Theses machines include moulting machine, stamping machine, tufting machine, bristle cutter machine, bristle trimming machine and Packaging machine. These machines need to be bought and connected to each other in order to build the full product.

To connect all the machines in the assembly line, the project requires also a full digital connection to an internal network. This network group all connected machines and database servers to store monitoring informations about the production. These informations need to represent the current production, the past production and potential errors in the production line.

The production line is fully automated throw this network and the production is regulated to produce exactly what is needed. This automatisation brings many advantages including the environmental impact reduction, reduction of the storage requirement of finished products and 24/7 production in case of huge demand.

The informations collected need to be displayed to the employees in charge of the production line. These informations are displayed throught an interface reading the monitoring data from the database. A master server has to be installed in order to control all machines and to control the production flow.

Several materials are required to produce toothbrushes. These materials are plastic, nylon, brass wire, paper box packing, plastinc hard container packaging, high frequency blister packaging and Blister card packaging. The project must include a storage space for all these material and human resources to load the resources in the appropriate machines.

All the production line machines, storage and digital network requires engineering the organise all these components depending on the space available and the shape of the building. Enginieering human resources are required to create, configure and install manitoring system. Human resources may also be required to manipulate machines, connect

each machine to the other and install network.

2.2 Forces

The forces of the project are mainly focused on the high effeciency of the production line. This high effeciency is garanteed by the monitoring system and the automatic management of the amount of product produced on the assembly line. This project represents a great opportunity to modernize the production of MOLD & Co. and automate the assembly line. By automating the assembly line, MOLD & Co. gain a lot of money on storage of manufatured products and human resources.

2.3 Weaknesses

This project have also small weakness that may have an impact on risks (Risk managment will be covered in the section 6).

The main weakness are the important amount of advanced technologies that requires a great amount of high qualified employees in charge of the installing and maintaining the autonomous system of the assembly line. Another weakness is the requirement of heavy and pricy machines that can represent a major part of the project's costs.

2.4 Social & Environmental guidelines

As our project takes place in the eco-city of Tianjin, it must include proper social and environmental guidelines. These are guidelines and must be evaluated during the project to qualify if these are possible to set up with MOLD & Co. budget.

2.4.1 Social engagement for project human resources

These guidelines includes social engagements for the well being of employees and human resources during the project.

Working hours For employeese better productivity, it could be good to restrict to 8 hours the day of work to complete a full week withing 44 hours. We must audit reguarly our employees about their opinion and well-being within the company through feedbacks.

Human rights and equity Our project must respect the human rights about children labor or unpaid employees. These are forbidden. Finally, our employees salary musn't depend on genre, race or physical ability.

Health Thus, our project is about health product. We must establish health requiremets to reduce baterial or viruses risks during toothbrushes production. We must include protection against noise and injury risks on the production line. That include collective equipments like protective foam, barrier, etc. But also personnal equipement like hear protections, gloves, etc. And we could give an introduction to the handling of machines for all employees to avoid injuries.

2.4.2 Environmental guidelines

Waste and recycling We must establish a plan and write good practicies about material waste in order to reduce our wast that have a huge environmental impact. Our automation system must optimise production in order to reduce waste. We could also collect rainwater in order to use it in bathrooms or for floor washig.

Effeciency We could invest in machines that are more profitable and resource-efficient to reduce the resources required to get the assembly line working. Moreover, it could be good to progressively invest in renewable energy in order to reduce our energy-related environmental impact. This includes solar panels, wind turbines or heat pumps that can be installed outside of the building or on employees parking.

Building optimizations The whole building could include some automations to reduce environmetal impact and reduce energy waste. These automations includes auto-switch lights and computers when there are not used.

Machine repairs To reduce environmental impact and keep our machines as long as possible, it's possible to introduce a repair culture during the project and after. This repair guidelines include bying repairable machines, recycle spare parts of deffective machines and train employees about machine repair.

Delivery guidelines Delivery is a huge part of our envronmental impact. To reduce this environmental impact, we could group most of our delivery to reduce waste of space in polluting transports like trucks. We could also promote rail transport over trusk transport. This transport method are way less polluting but more expensive.But High-speed train are developing in china and it could be reduced in the future.

2.5 Local investments & suppliers

Local investment It could be good, to participate in local project of Tainin. This investments could represent a good opportunity to communictae of the green engagement of MOLD & Co..

suppliers guidelines MOLD & Co. must audit it's suppliers in order to evaluate there social and environmental impact and be sure they fits with our own requirements.

Local implication Our factory is in a city and MOLD & Co. must communicate with local authorities about what it's happening in the factory. Local authorities include Tanjin City Hall and People's Republic of China government. MOLD & Co. must inform authorities about environmental risks and how we will manage in such case. We also require to be informed about local chinese health and sanitary requiremet in order to be consistent with it.

Actors and Stakeholders

We have assembled all the actors of the project in a clear and precise way in order to identify them. You will first find the different actors who have an impact on the project. Secondly, the stakeholders and their position in the project. Finally, the teams that need to be set up.

3.1 Actors impacting the project

You will find below a table containing all the actors having an impact on the project. All the stakeholders were identified and analysed according to the client's needs by the Cesi conseil team.

There are four columns :

Name : it is the name of the actor and stakeholder.

External or Internal to MOLD & Co. companie : The actor in question is internal or external to MOLD & Co.. This is its positioning within the project.

State : what type of domain is the actor affiliated.

Influence level : this is the level of importance of the actor in the project.

Name	External or internal	Status	Influence level
Mold and Co - HR department	Internal	Supervision	Important
Mold and Co - Production department	Internal	Manufacturation	Important
Mold and Co's direction	Internal	Client	Important
Cesi conseil	External	Provider	Important
Mold and Co's - It department	Internal	Supervision	Medium
Mold and Co's - Maintenance department	Internal	Supervision	Medium
Mold and Co's - Logistic department	Internal	Supervision	Medium
Tianjin city hall	External	Notice of construction	Important
People's Republic of China government	External	Supervision	Important
Suppliers	External	Supply	Important

Figure 1 – Table of stakeholders

3.2 Setting up teams

Following the stakeholder analysis for this project, we set up teams to maximize the company's production and meet the Chinese company's standards.

These are three teams distributed as a service to ensure the proper functioning of the company Chinetooth.

Name	Objective	influence level
Human Resource department	Recruit new employees, retain them and develop their skills.	
Engineering department	Conception, resource planning, scheduling, recording and traceability of production activites	Important
Assembly line installation department	storage and installation of machines	Important

Figure 2 – Table of teams working on the project

Humain resource department :will help to maintain a stable workforce over the long term.

Engineering department :its objective is to continuously improve the management of flows and stocks included in the work chain that begins with suppliers and ends with intermediate or end customers. There are three engineer department, one for machine, second for network and the last for industrie 5.0.

Assembly line installation department : the role of the marketing department is to define a company's strategy by proposing products and services that will promote the development and sustainability of Mold & Co. There are three teams, one for resource installation, second for network installation and the last for IoT installation.

Project planning

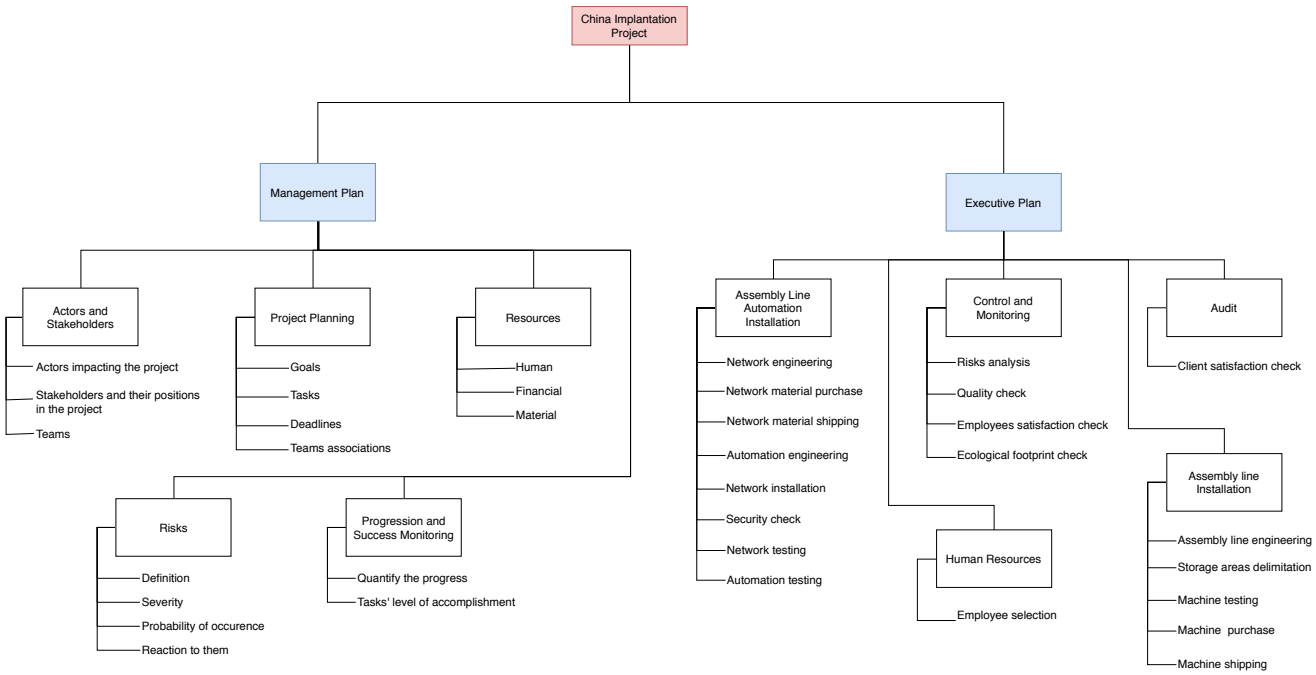

Figure 3 – Work Breakdown Structure of the project

4.1 Tasks

The project is separated in many tasks that represents all steps needed to reach the goal of the project. These tasks are separated in two categories : *Managment plan* in which all the tasks represents the redaction od the management plan of the project and *Executive plan* the represent the active part of the project in which the assembly line is installed.

4.1.1 Management Plan

The management plan is the part in which each step of the project is defined. The management plan is defined as a frame for the project and theses tasks must be achieved before all executive task. This part begins with a precise description of the project and goals followed by the 5 next parts.

Actors and Steakholders In this parts, we must think and describe all the avtors involved in the project. These actors are steakholders and can interact in some way with the project. The description includes theire position, their importance and the manner that they interact with the project. This task have also a goal of definition different teams that are required to bring this project to life.

Project planning Within this task, we must think and describe all the tasks required to finish the full project, the time and resources required to achieve each task and what are task dependencies. In this task, we must define what are deadlines and when to make debreiefing and evaluate the progression of the project.

Resources In this part of the project, we must identify and write the required resources to achieve each task defined in the *Project planning* part. These resources include : human resources, financial resources and material resources.

Risks In this task, we must define the primary risks that can occur during the project and how to reduce the side effect of each risk. Each risk have a severity and prbabilty rate that represent the criticity of it. Higher the criticity is, important the risk must be and planned with caution.

Progression and success monitoring Finally, in the progression monitoring we must identify what indicator can represent the progression or the success of each task and the whole project. These indicator will be used all along the project to define it's progression and if some task are taking late.

4.1.2 Executive Plan

The executive plan indicates all actions done after the work on the management plan. This category includes the installation of the assembly line and its automation, but also its control and monitoring, in addition of the human resources and an audit of the client.

Assembly Line Installation This part aims to identify the processes brought by the installation of the assembly line. After an assembly line engineering, in which we study the building disposal, where and how the machines will connect with themselves, we also study the place for the storage areas. We then test the machines after their purchase and their shipping.

Assembly Line Automation installation This part is about the automation of the assembly line, which includes a network engineering (the study of the disposal of the network in the building), the purchase of the material for this network (routers, switches, etc.) and their shipping to the building, before their installation and test. We also study the automation of the machines, how it will work, and how to put it in place, with also a testing session and a security check.

Human Resources The human resources part identify the employee selection process. Those employees must be fit to the required tasks of the executive plan. To the study of the

building and other engineering around the machines to the installation of the automation of those machines, and their control and monitoring.

Control and Monitoring After the installation of the machines and their automation set, we must control and regulate them. This includes the risks analysis process, which means a constant control and verification of the assumed risks but also an answer plan in the case of a crisis situation. We also check on the quality of the machines, their cleanliness and their working order, but also on the employee's satisfaction as we want to be sure they work in an environnement as comfortable as possible. In the same way, we want a constant control of the ecological footprint of the building to respect our environmental engagements.

Audit Finally, this task is required to retreive some feedback from the client. These feedback can lead to an improvement process and can be added to our quality pipeline in order to continuously improve our practices.

Required resources

In this section, we present resources required to reach our goals during this project. These reseources include *Human resources*, *Financial resources* and *Material resources*.

Risks management

Indicators of progression and success

Il est important de mesurer de façon continue l'évolution du projet. C'est pour cela que la section qui va suivre traitera des indicateurs clés de performance.

La représentation de tous les indicateurs choisis sont inscrits dans un tableau où l'on retrouve :

— le nom de chaque indicateur,
— l'objectif défini au début du projet,
— la valeur réelle de l'indicateur.

Si l'indicateur est a vert, il faudra poursuivre les actions en cours afin de maintenir ce bon résultat. Si l'indicateur est au rouge, vous devez prendre les mesures correctives nécessaires. Si l'indicateur est au orange, il faut alors le surveiller.

Les indicateurs clés de performance sont à suivres de près, en effet, ils ont d'une certaine façon, un impact financier sur le projet. Si l'indicateur est au rouge, les mesures correctives qui s'imposent généreront des dépenses additionnelles. Toutefois, si l'indicateur est au vert, c'est que tout se déroule comme prévu.

Nous classerons nos indicateurs clés de performance sous quatre catégoris :

Les délais : le projet se déroule dans les temps

Le budget : budget dépassé ?

La qualité : la progression du projet est-elle satisfaisante ?

L'efficacité : Le projet est-il gérer de manière efficace ?

Conclusion