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Abstract	This paper is written about ALPS group7 works. Our group consists of 5 people, the proposer company, and the mentor. The proposer company is ASKA Company. The company has manufactured and solid plastic products. It is established in1968. This time, the company had a problem like below and we tried to help it. "We, at ASKA COMPANY, manufacture and sell plastic food containers to distributers such as Glico and Nestle of Japan. Recently, with increasing environmental awareness, we have focused our efforts to produce thin and light plastic food containers. With these modifications, the mechanical properties such as brittleness and strength become increasingly important. However, we were unable to find any safety standard or mechanical testing instrument for plastic food containers on the market." So, we were focusing on making safe plastic containers at first. The meaning of "safe plastic containers" must be defined. Then, we found out the current state and what the company really wants to do by asking them. As it is known, once it provides the not safe plastic containers, it is going to be very big problem because it is related to food or something like that. We were trying to think the way to prevent the plastic containers from contaminations at ALPS
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Group 7

Group 7's Theme Proposed by Asuka Company

Theme 7:

Theme title: Providing of safe plastic food containers

Proposer Organization's Name: ASKA COMPANY
Supporter Name and contact info: Yuji Miki AskaCompany sales office osaka
E - mail: yuji-miki@askacompany.co.jp Tel : 0726-24-3138

Abstract of our project theme :
We, at ASKA COMPANY, manufacture and sell plastic food containers to distributers such as Glico and Nestle of Japan.
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There is risk of cracking
Container production process , Process of filling the contents,
Transport and When consumers eat
How to reduce the risk of cracking? Design? Resin Selection?

＜Key Words＞
More thin and light plastic food containers
Tolerable from the expected shocks

Fig. 1: we have developed a line of instruments

Fig. 2: Evaluate the property of crack

ALPS Final Report 2010

Group 7

PROJECT TITLE:
“CONTAMINATION CONSULTING”

Theme:

“Providing of safe plastic food containers”

Proposer Organization: Asuka Company

Proposer Organization’s Supporter: Yuji Miki

Keio Mentor: Masaru Nakano

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ALPS Group7

CONTAMINATION CONSULTING

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Member Name
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Member name
Yamada

1. EXECUTIVE SUMMARY

This paper is written about ALPS group7 works. Our group consists of 5 people, the proposer company, and the mentor. The proposer company is ASKA Company. The company has manufactured and solid plastic products. It is established in1968. This time, the company had a problem like below and we tried to help it.

"We, at ASKA COMPANY, manufacture and sell plastic food containers to distributers such as Glico and Nestle of Japan. Recently, with increasing environmental awareness, we have focused our efforts to produce thin and light plastic food containers. With these modifications, the mechanical properties such as brittleness and strength become increasingly important. However, we were unable to find any safety standard or mechanical testing instrument for plastic food containers on the market."

So, we were focusing on making safe plastic containers at first. The meaning of "safe plastic containers" must be defined. Then, we found out the current state and what the company really wants to do by asking them. As it is known, once it provides the not safe plastic containers, it is going to be very big problem because it is related to food or something like that. We were trying to think the way to prevent the plastic containers from contaminations at ALPS #2 or #3. We suggested the system that can be prevented contaminations like CAC which is Contamination Auto Checker [1].

However, according to ASKA Company, the contamination happens only 0.0000002%. It rarely happens. It is very difficult to prevent it because we don't know the happened area exactly and the number is very low. Also, we went to interview to know the current state from other food companies. They told us that's they will not cost on any system because they think it cannot be prevented 100% and if it happens only 0.000002%, it is better to cost on educations to apologize when it happens.

ASKA Company cares about the contamination, because it happens once, the reputation of the company goes down and lose the confidential whatever they do. But, the company has a good skill and technology to prevent contamination in comparison with other companies. We suggest that might be the strength of ASKA Company even the company thinks they want to do anything more. Before ALPS #5, it greatly changed the way. Next came out "Consulting Business" for ASKA Company. It can sell the technologies and "How-To" including our suggestions (CAC and oxygen absorber [2]) to other companies. In the future, the business model can be developed in other countries because high level technologies are required in China or something like that countries.

2. TABLE OF CONTENTS

3. PROBLEM STATEMENT

First requirement from the proposer company is "Providing of Safe Plastic Containers."

Theme 7:

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<Key Words>

More thin and light plastic food containers

Tolerable from the expected shocks

Fig. 1: we have developed a line of instruments

Fig. 2: Evaluate the property of crack

At first, we were trying to define the "Safe Plastic Containers." It means that plastic containers are not broken or no contaminations. If food makers or customers don't complain, it may be all right. But, contamination must not be happened only once. That's big problem and we should try to prevent it. At the same time, we should care about costs. Cost-effectiveness is very important. There are some ways to solve this problem. Making new systems or machines are one of the ways to solve it. We supposed that it might be expensive to do it because we can simulate the effectiveness and costs by using QFD or other tools. So this time, we make all stake holders happy through "Safety and Security."

4. ANALYSIS AND DISCUSSION OF ALPS METHODS

To-By-Using

At ALPS #1 or #2, we made it 3 things for "safe plastic containers." It is necessary to eliminate foreign substances, to keep products from foreign substances, and to obtain feedback from the systems. So It can be solved the problem.

"TO BY USING"

TO :	eliminate foreign substances
BY :	purifying
USING :	the new purifying machine

TO :	keep products from foreign substances
BY :	transporting
USING :	the new transportation system

TO :	obtain feedback
BY :	evaluating
USING :	the new evaluation system

QFD I

Customer requirements and customer weights are listed like below. Then we decided the number or effectiveness as it shows by hearing the company's requirement.

PHASE I QFD — No Contar

Correlation Codes	
+	Positive
-	Negative

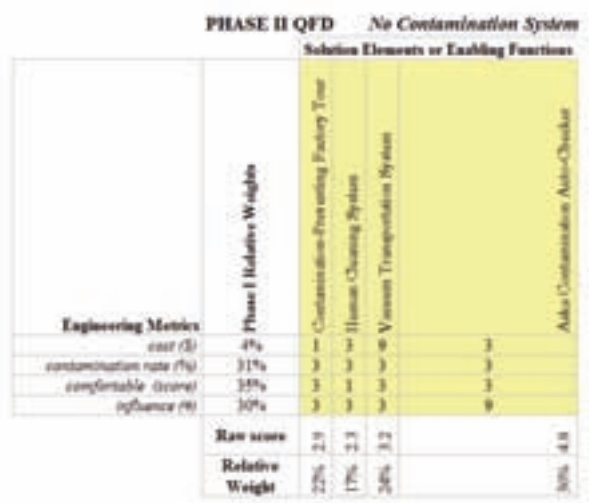
		cost ($)	contamination rate (%)	comfortable (score)	influence (#)	#REF!
			+	-		
		+	+	+		
	Preferred	nom	nom	nom	nom	

	Customer Requirements	Customer Weights	cost ($)	contamination rate (%)	comfortable (score)	influence (#)	Customer Perception: 1 Worse	2	3	4	5 Better
1	no insects	9		9	9	3			c	b	A
2	no smells	6		3	3	3			c	b	A
3	stable tempurature	3		1	9	9			Ac	b	
4	safety	9			9	9			c	Ab	
5	keep hair from people	9		9	3	3			Ac	b	
6	prevent from dust	6		3	3	3			Ac	b	
7	no lose of stationery	9	3	3	1	3			c	b	A
	Technical Targets			< 0.0000021%							
	Technical Benchmarking: Better 5			A		A					
	4		Ab	b	b	b					
	3		c	c	Ac	c					
	2										
	Worse 1										
	Raw score		27	228	261	225					
	Relative Weight		4%	31%	35%	30%					

Existing System or Competition
A: Aska Company
b: strong competitor
c: another competitor

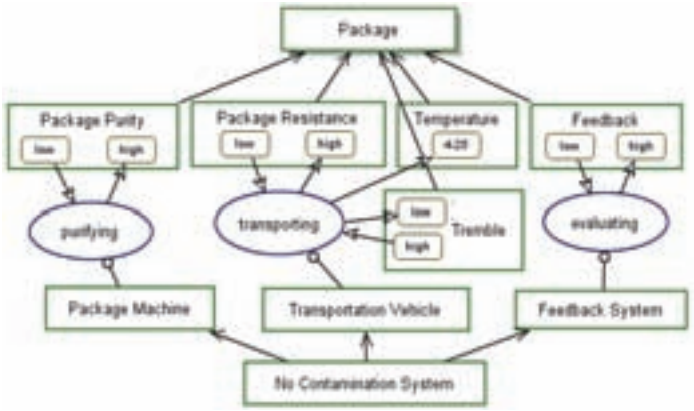
QFD II

In ALPS #3, we proposed 4 systems to prevent to contaminations. They are Contamination=preventing Factory Tour, Human Cleaning System, Vacuum Transportation System, and ASKA Contamination Auto-Checker. Then we calculated the each systems.



OPM

Only the OPM level-0 was done in an early stage of our project.



Various information was used for this tool. The major information may come from the CVCA identifying the stakeholders that helped us to define the functions the system has to handle. Thanks to the Scenario Graph and the CVCA, the functions were linked to objects. Identifying the needs of the stakeholders helped us to define the boundaries of the system and translate it into processes and objects, and the interactions between them.

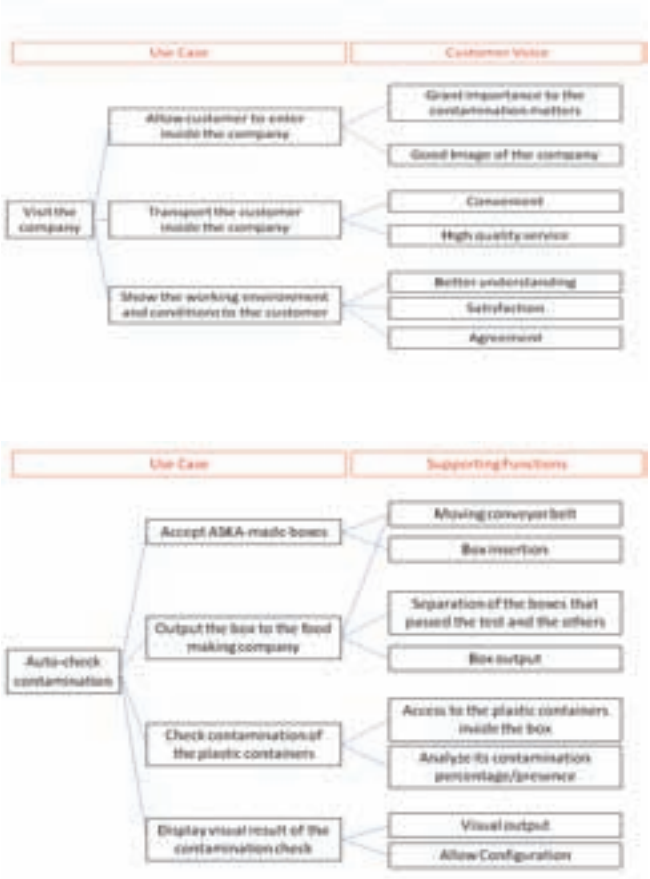
We finally ended up with a system based on 3 main processes: purifying, transporting and evaluating. All processes apply to the same object, the package, but with different points of views. While the purifying process considers the pollution level of the package during its creation, the transporting process focus on maintaining the package in a clean form, and finally the evaluating process helps improving the previous two processes by giving a complete and detailed feedback of the system.

The next step is to go into the next level of the OPM. To go inside the processes and or objects we created. This will be done later, but for now, we can easily define the To_ By_ Using_ statements reading this diagram.

It was important to define what the system shall do but also what it shall not do. At this early level stage of the development, it was important to bound the system to reduce ambiguity. At first it was hard to fine a unique way to decompose the system, but after different considerations we came up to what is now our concept.

Use-Cases

We made two kind of use cases, one showing the customer voice (for the factory visit) and one with the supporting functions (for the CAC).



The Use-cases were pretty limited for our project as we are faced to a very narrow "problem solving".

Most of the use cases come from AKSA company itself, as it is also our main customer. What ASKA company wants is to end contamination problems.

So the use-cases we have are linked to the different steps of the food container from its arrival at ASKA company to its arrival at the final customer.

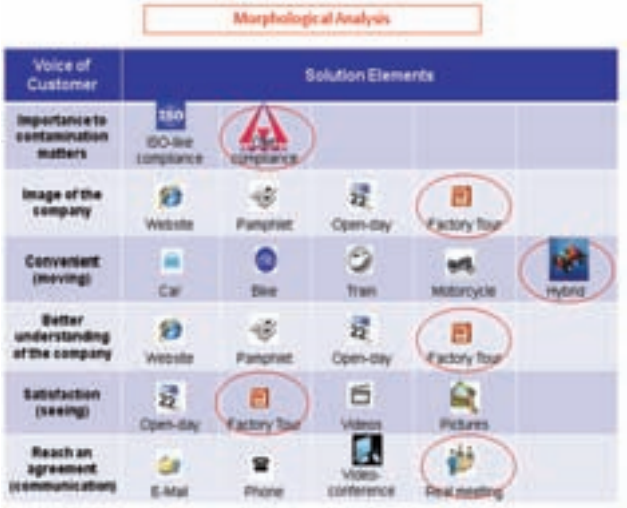
In a sense, the input is the "life-stream" of the plastic container.

The Voice of the Customer was both an input and an output of the Use-cases. It was an input to define the use-cases and an output to see the customer reactions/feedback on it. The functions required by our system have also been highlighted from the use-cases.

Morphological Analysis

The functional elements are then the inputs of the Morphological Concept Generation. But for our project, it was hard to use this tool as we do not deal with any new technology and do not even have any real technology. The Voice of Customers Morph analysis was more relevant and therefore we preferred a VOC-based Morph analysis for our project.

The Morph analysis helped us to think about many different solutions for each sub-function to then focus on one solution. Going wide, and then focus to a solution.



DSM

DSM is a powerful tool, especially for large projects.

It helps to decompose the project into smaller projects for being more efficient while keeping in mind the future integration.

In our case, we took the example of the Contamination Auto-Checker and the oxygen absorber. This is not a big project, so DSM itself is not so useful in our case, but we could taste it and realise how useful it could be if our project had been bigger.

We identified only 16 tasks and already new beforehand what the result will be, more or less, and DSM only confirmed our guesses, but we can imagine that if the project had been bigger, using DSM helps us to divide the project into several smaller projects.

The result of the DSM tool for our project is as follows.

Selected Tasks for the Contamination Auto-checker + Oxygen Absorber (16)

- Concept Development
- Design of the conveyor belt
- Design of the oxygen absorber system
- Design of the box opener mechanical arm
- Design of the x-ray foreign body contaminants checker
- Design of the box closer mechanical arm
- Buying and testing the conveyor belt
- Development and testing of the oxygen absorber system

· Development and testing of the box opener mechanical arm
· Development and testing of the x-ray checker
· Development and testing of the box closer mechanical arm
· Development and testing of the PASS/FAIL application
· Testing and Validating the system
· Cost Estimation
· Find clients (food makers)
· Implement the system for the clients (at factories)

Task
Concept Development
Design of the conveyor belt
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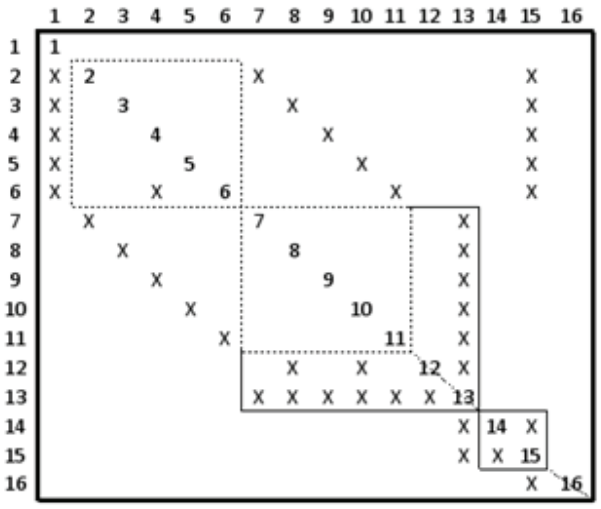
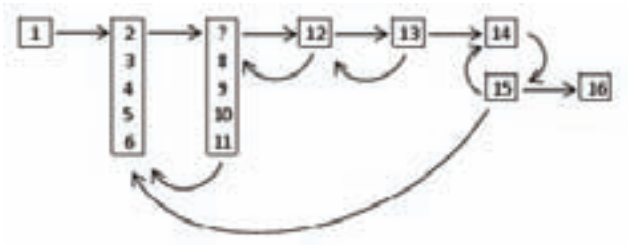




Structure of the project

Interview / Observation

As one of the method explained in the ALPS to know the opinion of stakeholders we have tried to interview a food maker in order to know the current situations of contamination. These are the outline of the questions and answers of the interview.

Q. Do you inspect contamination of food containers from the supplier before fulfilling?

A. → We are satisfying ISO9000, HACCP combined standard, and "we do not bring in and do not let someone bring in insecure input."
So,
1) We clean the containers (e.g. can for candies) by air-blow.
2) We inspect food (e.g. candies) by human eyes before manual fulfilling.

Q. Do you have special equipment for inspection?
A→1) Air-blow machine
2) No special equipment

Q. What kind of inspection method do you have (e.g. laser)?
For example, can you check the contamination of candy itself by X-ray or something?
A.→Not for food containers.

Q. Is the inspection executed before supply or before fulfilling?
A.→before fulfilling

Q. If you find contamination in one food container?
Do you return the whole lot to food container maker or dispose?
→If the food wrapping is one by one, we dispose the one.
For cans and boxes, we return the whole lot to the container maker.

Q. How much is the percentage that the food container maker is responsible for contamination?

→0. We have not experienced such accident.

Q. If unfortunately contamination happens and responsibility is unsure, how

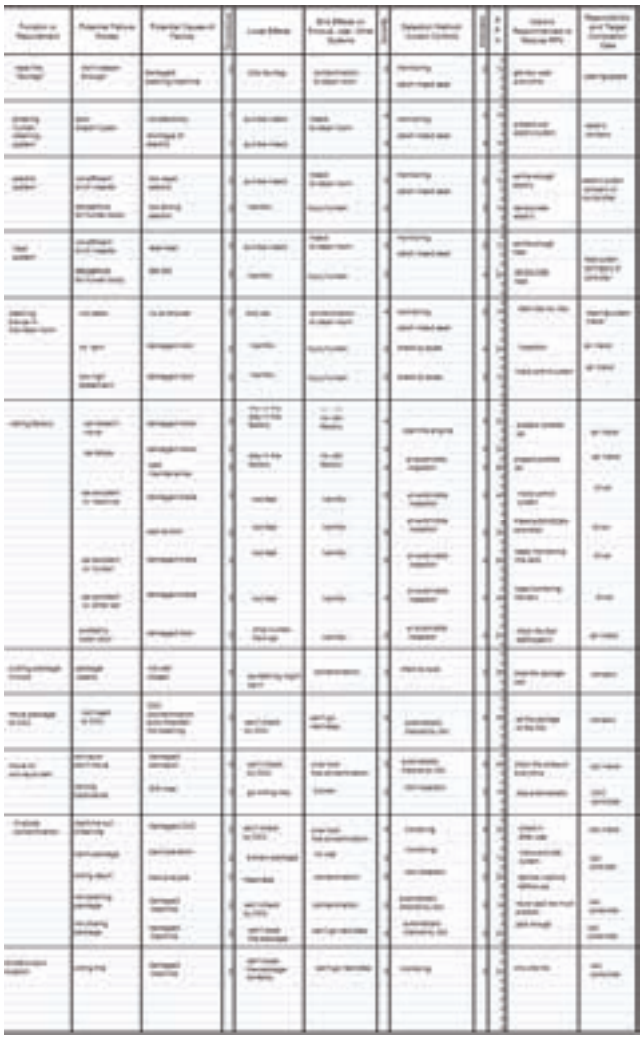
do you treat it?

→Because of ISO9001 and HACCP, responsibility should be clear for every accident.

From the result of the interview, it has been observed that the responsibility of troubles in the delivered products is always clear because of the international standards such as ISO9000 and security management methods such as HACCP(/Hazard Analysis and Critical Control Point/).

FMEA

First, it was necessary to list up the function or requirement for the systems which we proposed to prevent the contaminations. Also, potential failure modes and potential causes of failure are required to add. After that, we scored the occurrence, severity and detection. Effects, Detection Method or Current Controls, Actions Recommended to Reduce RPN Responsibility and Target Completion Date are also suggested. We can understand which one we should focus on next by checking the scored number.



5. DESIGN RECOMMENDATION

5.1 Final Solution

Our final solution is to create a new service area inside ASKA company: a consulting business.

This consulting business is based on ASKA know-how and experience. ASKA has been focusing on plastic non-contamination for many years and always tries to improve it. This is ASKA's strength and this is what ASKA has to take advantage of.

Our final solution tries to answer to the two main concerns of ASKA and the other involved stakeholders:

- reduce the contamination risk even further more
- improve the recognition of the quality of ASKA products

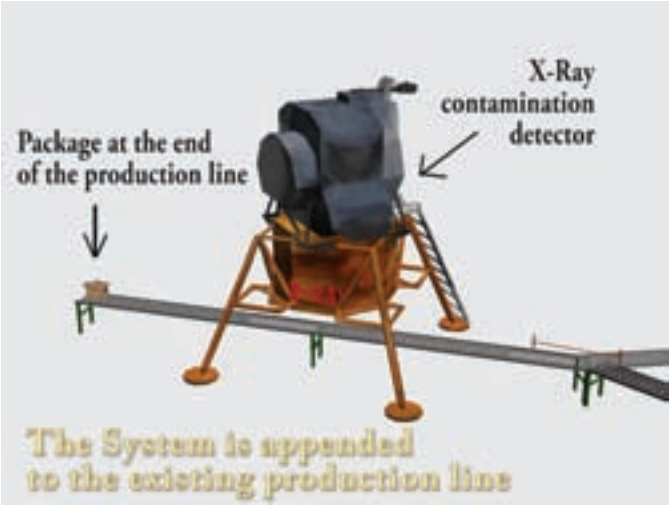
The first issue has been dealt with new technologies such as a "Contamination Auto-Checker", and an oxygen absorber that ensure there is no contamination in the package when it gets out from the company.

The second issue has been dealt with the new consulting service that promotes ASKA products quality and know-how and help other companies to reach such degree of expertise.

5.2 Product/Process Specification

5.2.1 CAC

The Contamination Auto-Checker main component is an X-Ray machine designed especially to detect contamination in plastic containers such as the containers produced by ASKA company. The X-Ray machine is just appended to the existing production line at ASKA company factory, right after the last current step (see below).

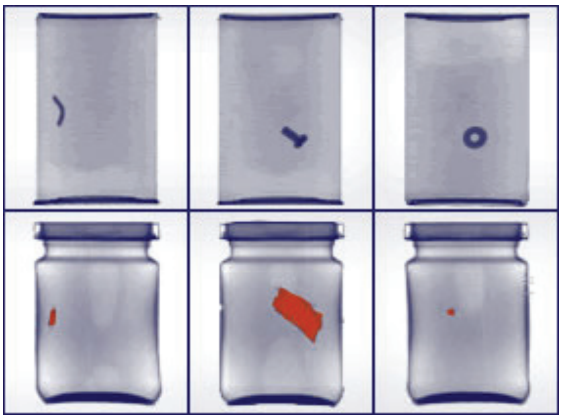


X-Ray contamination detector

According to ASKA statistics, insects in the factory are the main source of contamination.

ASKA puts a lot of emphasis to prevent insects contamination and the X-Ray machine is able to detect small contamination like insects.

The pictures below show examples of contamination that the machine is able to detect:



Examples of contamination detection (© AIS X-Ray)

If the X-Ray machine detects a contamination, the product is not delivered to the next step but sent to a storage place for being destroyed, purified and recycled.

According to ASKA Company statistics, a contamination at this step happens to 1 package for 500 000 000 (0.0000002%).

So far they did not have any further contamination detection so the contamination was detected by the food maker on reception of the package.

Thanks to this X-Ray contamination detector, the contamination can now be detected directly inside ASKA Company.

And in order to guarantee that the package will still be without contamination at reception, we designed the next and final step of the containers production: oxygen absorber.

Use-Cases / Scenarios:

- If there is contamination
  - the X-Ray machine shall detect it
  - the package shall go to the "FAIL" lane.
- If there is no contamination
  - the X-Ray machine shall not detect contamination
  - the package shall go to the "SUCCESS" lane

5.2.2 Oxygen Absorber

The Oxygen absorber is the final step of the production line.

Immediately after a package has been validated as being free from contamination by the X-Ray machine, a mechanical arm inserts an oxygen absorber inside the package and closes it.

Oxygen Absorber

Oxygen absorber inside the package

The oxygen absorber, still with a red mark, is inserted into the plastic bag before the whole package is closed. If oxygen enters inside the package (so if the package is opened), the mark turns into purple color.

So when the food makers receive the package, they can directly check if the package has been in contact with air or not. If the color remains the same (red), the package has not been spoiled, so there is no contamination!

Use-Cases / Scenarios:

· If the package has been opened or in contact with air during the transportation

o the oxygen absorber shall change color

· If the package has not been opened or in contact with air during the transportation

o the oxygen absorber shall keep the same color

5.2.3 Consulting Service

The last part of our final solution is the consulting service.

In addition to the previously explained solutions, the consulting service has been opened to share ASKA know-how with other companies.

ASKA will have a special team assigned to the consulting services. This team will provide to other companies or individuals information about containers contamination and how to prevent the contamination.

Another obvious goal is to improve the reputation of ASKA to make new contracts.

It's a win-win service as competitors can improve their own services benefiting from ASKA consulting services, and ASKA can make new contracts with food makers while it's reputation goes up.

Scenarios:

· A food maker company wants to know more about containers contamination

· A food maker company wants to see how ASKA deals with contamination

· A container maker company wants to see how ASKA deals with contamination

· A company wants to aware their employees about contamination

· A company wants a seminar about containers contamination

· A company wants to train its employees to take enough precaution to avoid contamination

· An individual wants to know how the containers of the food he is used to eat are produced

· ==> They all ask ASKA Consulting Services.

5.3 Implementation and details

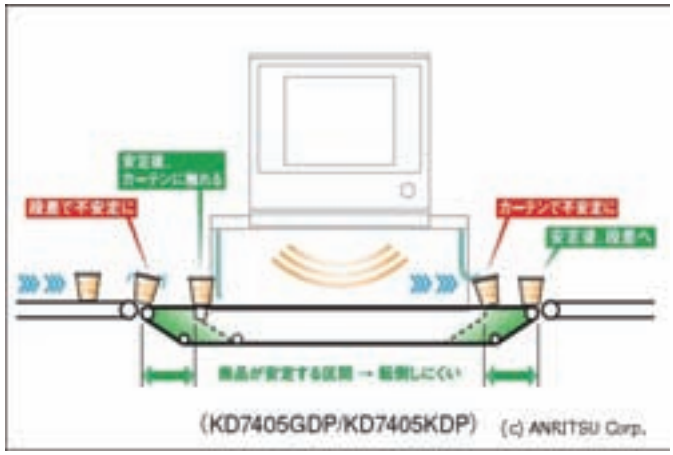
5.3.1 CAC Implementation

Many manufacturers propose containers-specific X-Ray machines.

For instance, Anritsu© in Japan proposes a X-Ray machine for plastic containers able to detect small contamination such as insects.

Anritsu© KD7405KP

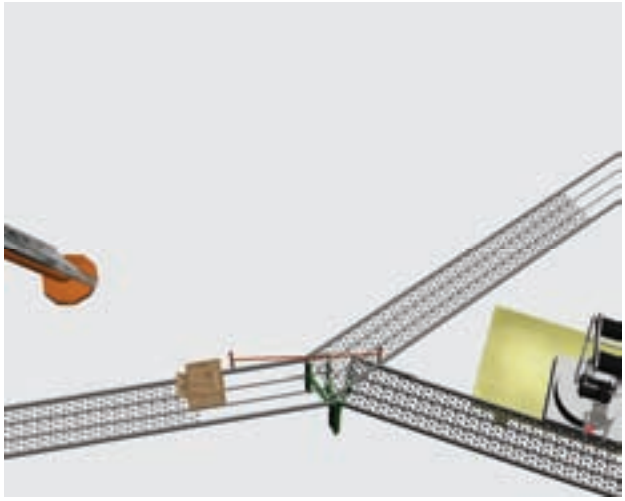
This X-Ray machine works on an existing production line:



Anritsu© X-Ray

Size specification can be found in the appendix.

The X-Ray machine will be coupled with a "PASS/FAIL" small system that redirects the package to the FAIL lane if contamination is detected (so the package can be destroyed, purified and recycled), or let it go to the normal lane if there is no contamination.



Lane changer linked to the X-Ray machine (in red)

5.3.2 Oxygen absorber implementation

There are two known types of oxygen absorbers. All absorbers have a special barrier to prevent it's content from making contact with the rest of the package.

The first type of absorber lasts only 6 months (meaning that after six months the color may naturally turn into another color even without opening the package) and turns into another color within 20 minutes after entering in contact with oxygen. This type of absorber is suitable for packages that are sent to the food makers within 6 months.

The second type of oxygen absorber lasts at least a year, turns into another color slower (within two hours) and is more suitable for ASKA as most of the packages are kept between 8 months and a year at ASKA storage.

5.3.3 Consulting service implementation

ASKA will form a new special team assigned to the consulting task. They role is to provide information about containers contamination and how to prevent the contamination to their clients and to other companies or individuals.

ASKA will start a consortium about containers contamination to motivate rules of production and verification in order to eradicate contamination from the containers.

Practically, ASKA will open a new section on its website about its consulting services. On this website, food makers, other container makers and individuals can download pamphlets of ASKA contamination precautions, training books, awareness books.

A Call Center will be set up so they can call the ASKA Consulting Team to have advices or to book seminars. ASKA Consulting team will provide seminars about contamination prevention, detection and suppression to other companies. The seminars can be done by ASKA Consulting Team in other companies offices or can be hold in ASKA office with live demonstrations of their systems.

If some companies are interested in some parts of ASKA contamination prevention system, for example the CAC, the cleaning room, the air shower... ASKA can sell the systems to them.

But the main focus in a first time will be to transmit their know-how to other companies so other companies can adapt their systems by themselves and join the consortium. By joining the consortium, they can contribute to the containers decontamination in general.

6. COMPETITIVE ANALYSIS

The business model which we propose is the consultancy against the contamination. The consultant companies against the contamination already exist. However, we think that ASKA COMPANY will be more dominant in consultancy circles by making the best use of the aspect as the manufacturer. We think ASKA COMPANY has an advantage, because they know the manufacturing process from the material acquisition to the shipment. It helps to choose the most effective method against each contamination. As a result, they prevent the contamination by the cheapest method.

6.1 The estimate of revenue and expenditure

The revenue sources are income from the consultancy and the operation costs against the contamination for their customer. (ASKA COMPANY does molds-cleaning business already.) And, the expenditure is labor cost, transportation expenses, staying expense. ASKA COMPANY already has various knowhow against the contamination. So, they only have to collect their knowhow and make manuals against the contamination. Furthermore we propose the making of demonstration machine to get good business performance as the first stage investment. In this case, ASKA COMPANY needs redemption expense of demonstration machine and maintenance expense of it.

6.2 Assumptions of our forecast

First, ASKA COMPANY consults for other plastic container maker by using their knowhow. Furthermore we propose 3 types business case.

(1) The development to another type of business;

such as food companies, filling makers and semiconductor manufacturers and so on. These industries need the prevention methods against the contaminations, too.

(2) The development to foreign countries' factories.

We think the developing countries' incidence rate of the contamination is higher than Japan's. So, ASKA COMPANY's knowhow is more effective there.

(3) The expansion of their consulting contents.

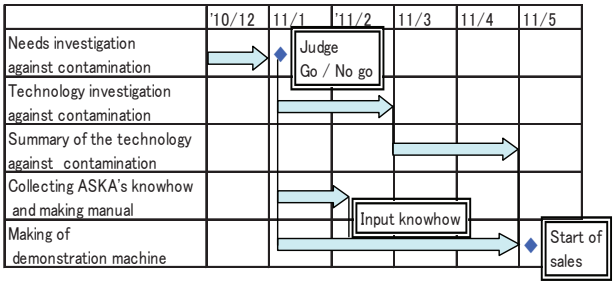
ASKA COMPANY develops original evaluation systems for their products. These unique evaluation systems are their strength, too. So, we proposed the consulting of evaluation, too.

6.3 Development Time/Risk (See Figure below)

We need 5 months for development period.

- The needs investigation : 1month,
- The technology investigation against contamination : 2months,
- The summary of the technology against contamination : 2months,
- The making of demonstration machine: 4months (side by side).

The risk of this consultancy is an outflow of knowhow. If major knowhow is drained, price war may start.



Development schedule of this project

6.4 Protections strategy against competition

We propose branding and making the stickers of it to ASKA COMPANY. The branding name is "ASCO" which named after ASKA consultant. These stickers show the quality assurance like "intel inside". (See Figure*) Besides, it's useful for advertisement.

Intel corporation logotype

7. ALPS ROADMAP AND REFLECTIONS

7.1Method of the Alps that our team used

・**Brainstorming**

Various opinions and sense of values were reflected in the solution. It used it by all scenes. It was very important to hear member's opinion.

・**Scenario Graph**

We were able to draw a simple scenario to solve the problem. We have not understood what we should do first. However, the whole was arranged with this tool. And one answer was able to be led. We were able to focus the contamination with this tool.

・**CVCA**

We were understood various factors and the environments that surrounded our problem. And, the overall flow related to ASKA and the contamination was able to be understood well.

・**To_By_Using**

We were able to examine the means to straighten out that problem. It had a hard time in development afterwards though focus was done to the contamination. At that time, the method and the purpose were able to be arranged with this tool.

・**Mind Map**

A lot of stakeholders and various factors are related to the system that proposes it. At first we were not thinking only of ASkA. However, various risks were able to be noticed by having used this tool.

・**Road Map**

ALPS is a very long project. In addition, there are many jobs. We create a roadmap, and time management conducted. We were able to effectively promote the roles by working with this administration.

・**Robust Conceptual Design**

It was possible to make it to the system that considered safety enough with this tool. There was particular about the CAC should consider using this tool to function well, so very complex system.

・**Prototype**

We made a prototype of the CAC. Size and shape, and could better understand the structure. In addition we were able to grasp the problems and improvements.

7.2Roadmap

ALPS#1

Oops
It had made a mistake in the first scenario.
It paid attention to strength of the container.

⇩ Brainstorming Scenario Graph CVCA

Aha
Focus on contamination.

⇩

ALPS#2

Oops
Contamination can happen anywhere.

⇩ To_By_Using Mind Map Road Map

Aha
Contamination can happen anywhere.
Do you want to check where the contamination is happening in reverse.

⇩

ALPS#3

Aha
We invented the CAC.

⇩

Oops
CAC precedent, the cost, do you need?

⇩ Interviews

ALPS#4

Oops
ASKA is very low incidence of contamination.

⇩ Robust Conceptual Design Prototype

Aha
Asuka has knowhow in preventing contamination.

⇩

ALPS#5

Eureka
By using the ASKA's know-how and new technologies and X-ray can prevent contamination Consulting.

7.3 Reflection point and the refinement of this project

Reconsideration of this project that the direction could not decide until the end. Because the brainstorming and the interview were insufficient. And we think that the reason is CVCA and stereo graph were not substantial. Therefore I think that a start becomes very important by the next project.
At first we should talk well. And we should interview various people. An opinion and information become all origins. We want to pour much time for talks and intelligence if we can draw a roadmap once again. And we want to make the system which more realistic and effective, and attractive.

7.4 Other constructive feedback or comments

DISCUSSION WITH THE FOOD MAKERS REQUIRED ASAP!

We were worried. And our systems were not able to have confidence. It was possible to proceed to the next step by the comment. We thought that it was important to consult various people and to get the comment. We expect that more people participate and challenge a project in high motivation from future ALPS.

8. CONCLUSION AND FUTURE WORK

ASKA company's businesses are to design products, produce die-set and fabricate products. Their products are plastic products such as food containers and tube caps. The company is taking all the possible measures to deliver safe food containers free from contamination to food companies, and so-called contamination occurrence rate has been almost zero for many years. It means that consumers can purchase safe food contained in plastic food containers.

Consumers may not care about safe containers rather than safe foods. However, it has been concluded that the reason why consumers can enjoy safe foods is that food container maker is making big efforts in preventing and finding contamination under the concept of contamination prevention system.

The system is not consisted from special ideas or innovative technologies. Though, it is combinations of existing methods to satisfy safety requirements such as food safety hygiene legislations. In addition, the system covers not only the production process of food containers but also shipment and delivery of the containers. Because of this, there has been almost no contamination.

In this project, the team has tried to find a new method of contamination prevention. However, it was very difficult to find further improvement target. Therefore, the team has proposed a consulting business utilizing the contamination prevention system which has good achievement. Not only the existing system but also by adding X-ray inspection equipment and oxygen absorber, a new contamination prevention system named CAC has been proposed. By utilizing the existing system, it is assumed that offer of the system in affordable price will be possible. Thus, the proposal will be acceptable to overseas SMEs and family business sectors too.

9. ACKNOWLEDGMENTS

Our deepest appreciation goes to ALPS members who provided helpful comments and suggestions. We are also indebt to our mentor, the proposer company, and the interviewees who gave us invaluable comments and warm encouragements.

10. REFERENCES

[1] For CAC:PDF of Anritsu Corp (last file in Yamada-san e-mail about contamination (ZIP))

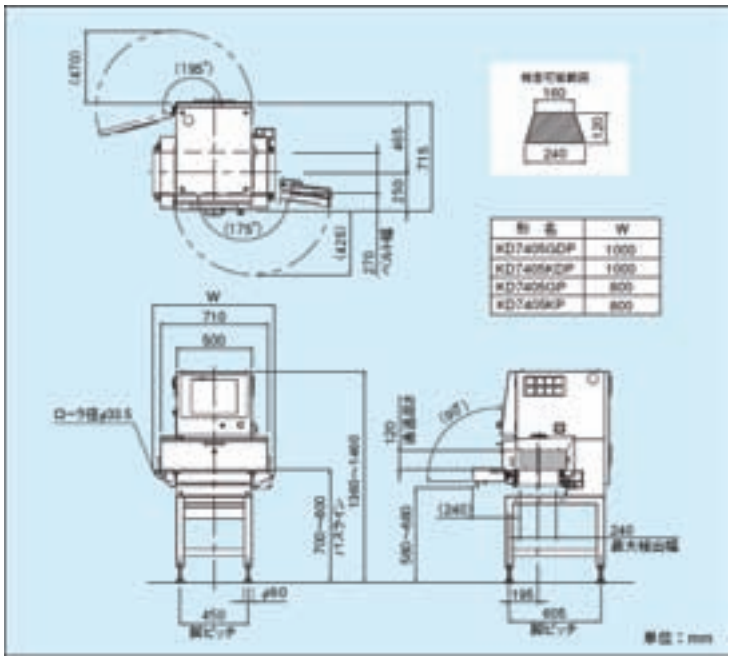
Advanced Inspection Services (http://www.aisxray.co.uk/)

[2] For the Oxygen Absorber:

https://www.usaemergencysupply.com/information_center/packing_your_own_food_storage/oxygen_absorbers.htm

http://www.sorbentsystems.com/o2absorbers_2.html

11.APPENDIX



Anritsu© X-Ray Size Specification

Group 7’s Final Presentation Slides

Contamination Consulting

ALPS #5

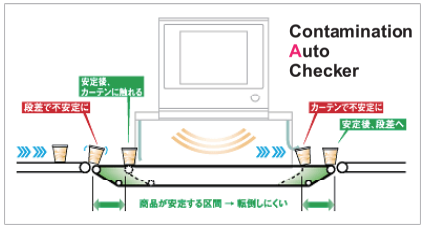
2010.11.12
Team7

■Current Details

TO ALPS#4

The contamination is a big problem for the container manufacturer.

To prevent contaminations.



It proposes CAC.

BUT

The contamination incidence in ASKA is 0.0000002%.

⇨ **It hardly happens.**

--Interview-- Food maker's comment

- They already have measures to prevent contamination like HACCP which is Hazard Analysis and Critical Control Point. They can prevent by that.
- The contamination doesn't happen or happens very rarely.
- They will not pay for systems to prevent contaminations.
- Systems would be different depending on the contamination types.
- It's difficult to find all contaminations completely.

Result

LAST ALPS

We want to make the best use of not only CAC but also the know-how of ASKA.

Contamination Consulting

■ASKA'S know-how

- How to remove contamination from hands
- How to remove contamination from cloths
- How to remove contamination from shoes
- How to manage the bacteria
- How to manage the cleanness in the room
- How to protect from insects

■Business case and future recommendation for the sponsor

-Consulting-
Aska sells the contamination prevention system including education system.

For Venture company small and medium-sized enterprise

【Before entering】

・Clean room
・Air shower



【During production】

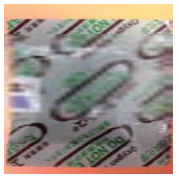
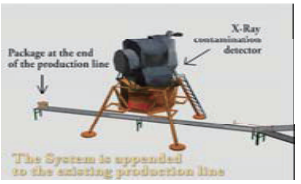
・Colored adhesive tape
・Shoes cleaning

【During check】

・Inline detect (new!)
・Partical counter

【After transporting】

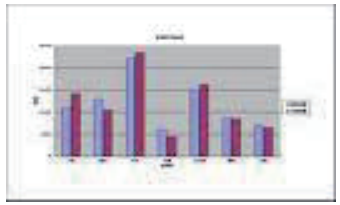
・CAC (new!)
・Oxy absorber (new!)

【Ordinary】

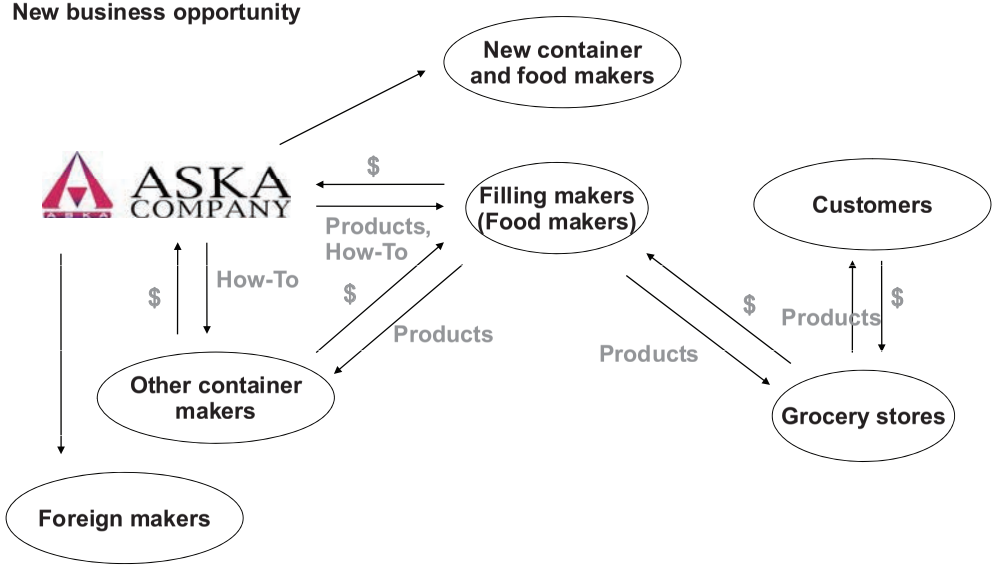
・Making to date

Number of insect and hair etc.



■Final solution

New business opportunity



It contributes to SAFETY and SECURITY.

■Summarry

Aska will sell “How-To” to container makers and food makers.

The reputation of Aska goes up.

Then, Aska can get new contracts.

In the future, Aska goes abroad for the consulting.

ASKA COMPANY CONSALTING


Thank you for listening.