

# **Vendor Assurance within an integrated Food Safety Management Program**

**Dubai 2<sup>nd</sup> International Food Safety  
Conference 2007**

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(Masterfoods)**



# Objectives

- To highlight the importance of raw material quality to the delivery of high quality food products
- To present an example of a framework that can manage the risks posed from a raw material supply
- To demonstrate the need to integrate the Material Quality Management Process (MQMP) into the overall food safety management program of a product / process
- ..... in 30min !



# Contents

- Risks posed by raw material supply
- The value and principle of a material quality management process within vendor management and assurance
- Relationship MQMP within overall food safety management
- MQMP
- Metrics and Continuous Improvement
- Key Challenges & Summary



# Raw Material Food Safety Issues

***“A study to investigate 1,307 food safety recalls between 1999 - 2003 in the US revealed that 810 (62%) were related to raw material non-compliance”***

Source: US FDA Centre For Food Safety & Applied  
Nutrition  
Food GMP working group : Report summarising Food  
Safety Recalls 1999 - 2003  
<http://www.cfsan.fda.gov/~dms/cgmps2.html>



# Product Recall: November 2006



November 12, 2006 Issue linked to products manufactured between October 15th-  
November 10th

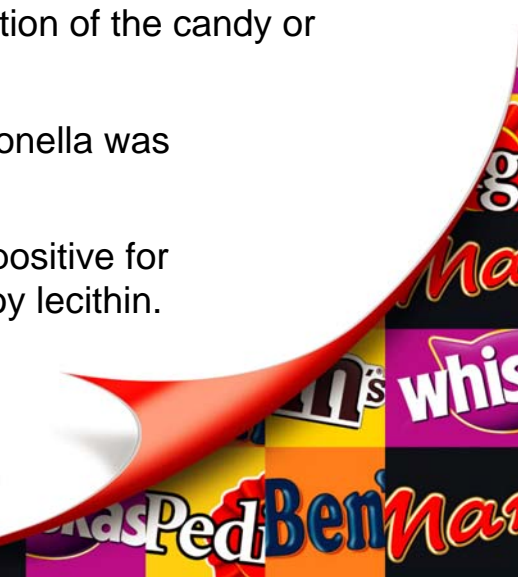
Hershey Canada has recalled many chocolate bars and baking products — including Hershey bars, Reese's Peanut Butter Cups and Oh Henry! bars — because they may be tainted with salmonella.

Hershey Canada Inc. and the Canadian Food Inspection Agency (CFIA) released a list on Sunday of 25 products they say could be contaminated with the bacteria.

There have been no reported illnesses associated with the consumption of the candy or chocolate chips on the recall list, the company said.

The company's plant in Smith Falls, Ont., was closed after the salmonella was discovered.

Contaminated externally sourced minor chocolate ingredient tested positive for salmonella during routine quality inspections, found out later to be soy lecithin.





## Product Recall: December 2005



**Incident:** Aflatoxin contamination of petfood products due to raw material corn contamination

**Triggering Factor:** Illness and death reported in animals and associated with consumption of Diamond products. Allegations publicly reported

**Business Impact:** 18 products were recalled in 23 States





## Product Recall: February 2005

Biggest recall in UK food industry history and recalls relating to incident still happening in January 2006

Illegal food dye and known carcinogen

340 customers and up to 5000 products affected via chilli powder



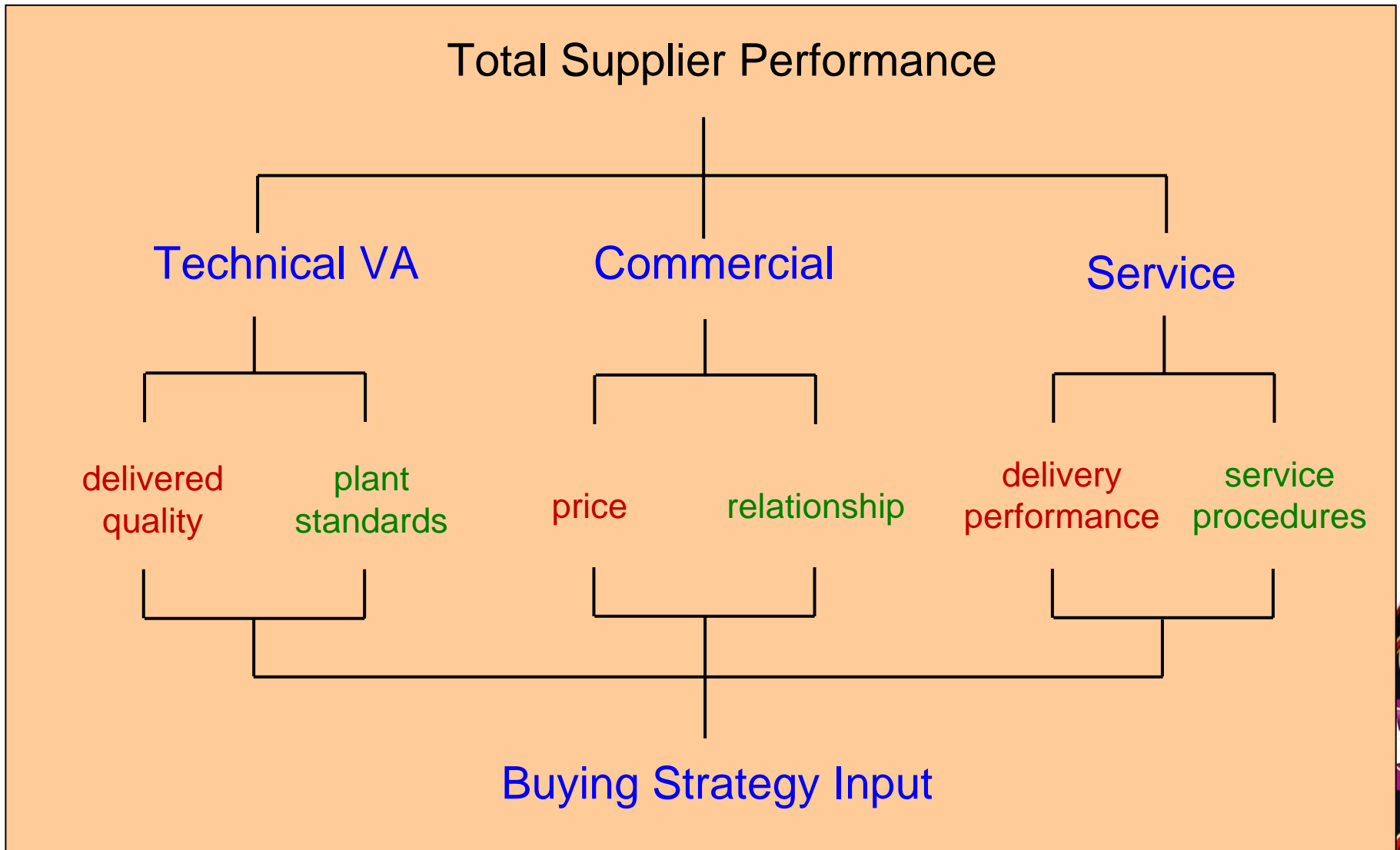
# So.... Need for a Risk Analysis Strategy

- Raw material
  - risk assessment
  - risk management
  - risk communication
- Integration of risk analysis within an integrated total-pipeline risk analysis strategy

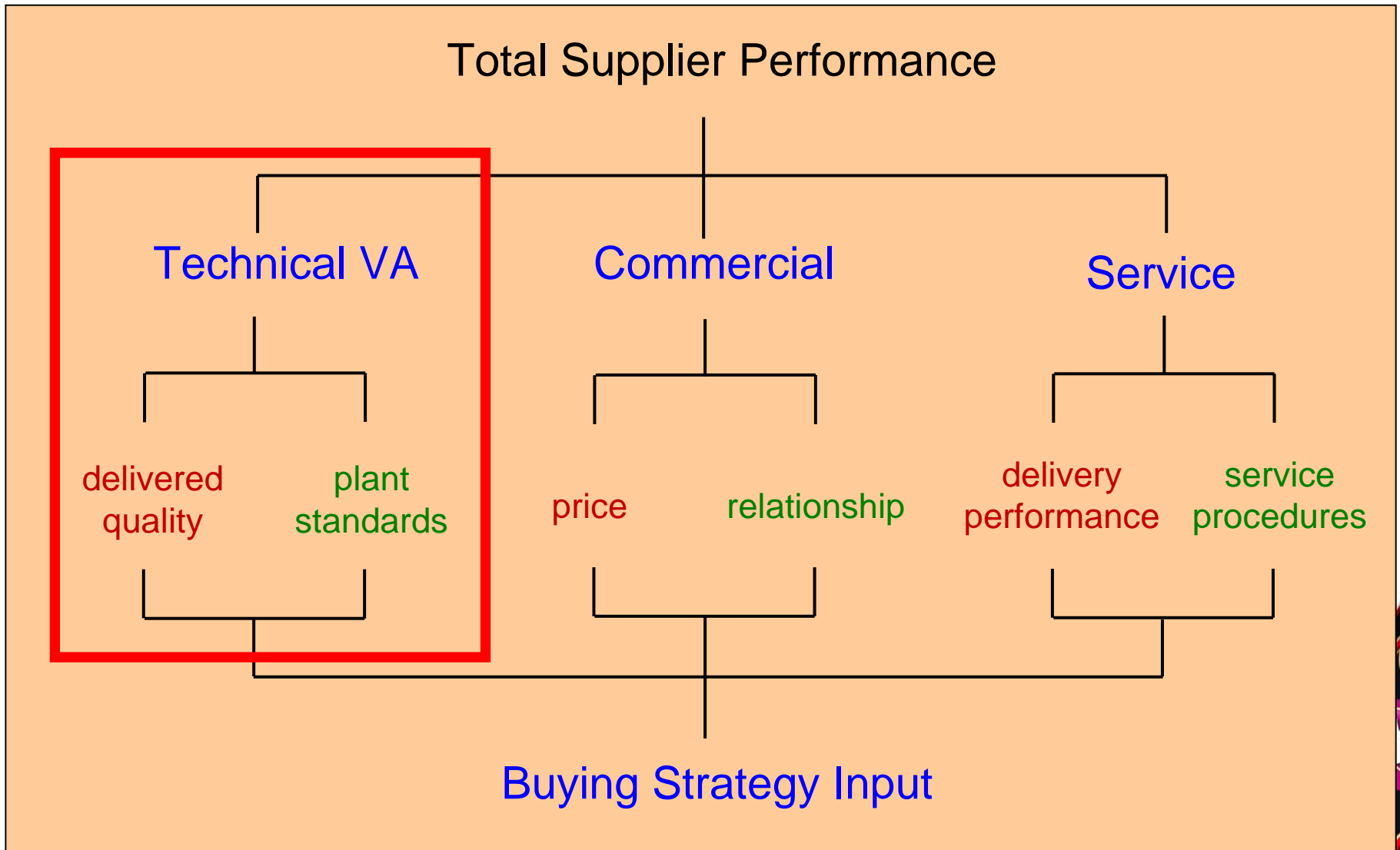




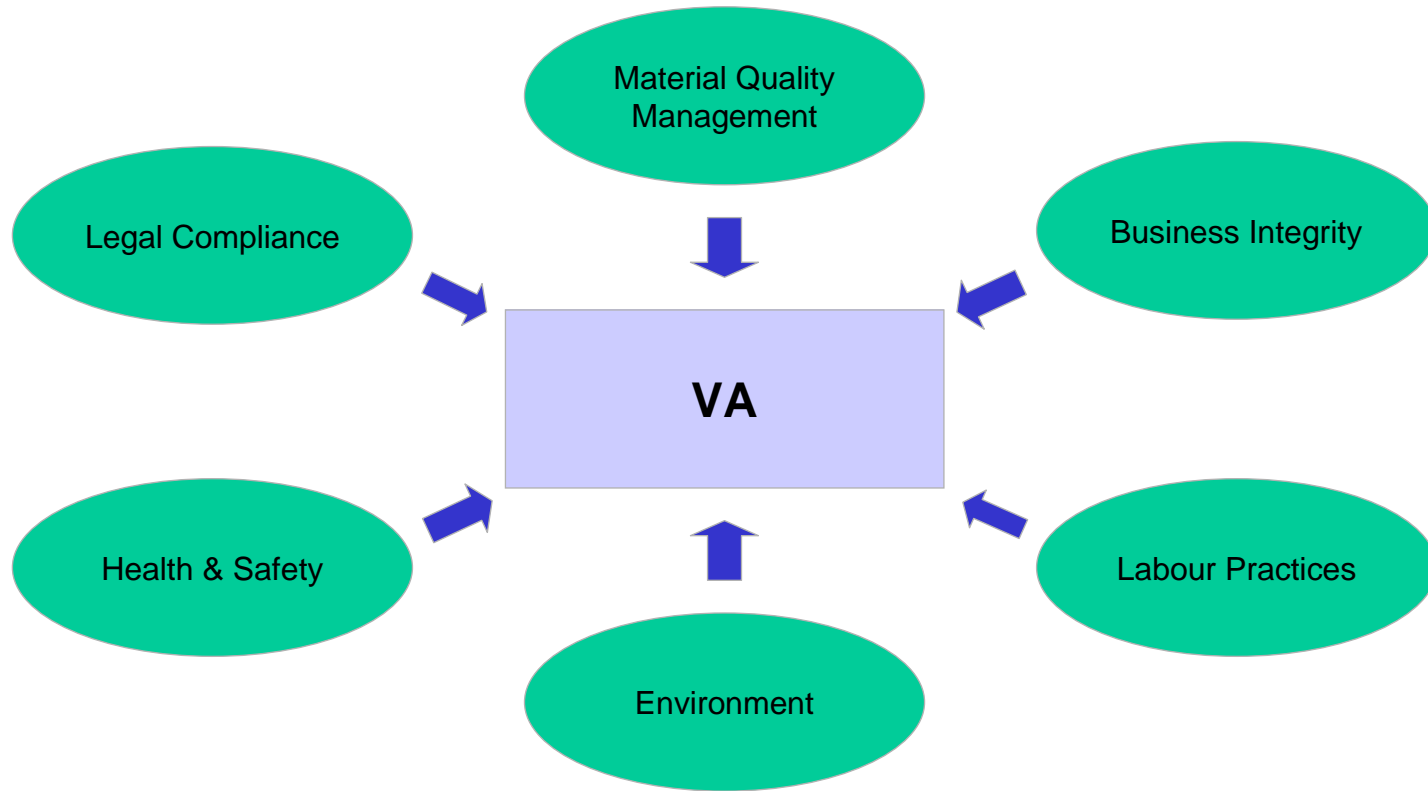
# Supplier Relationship



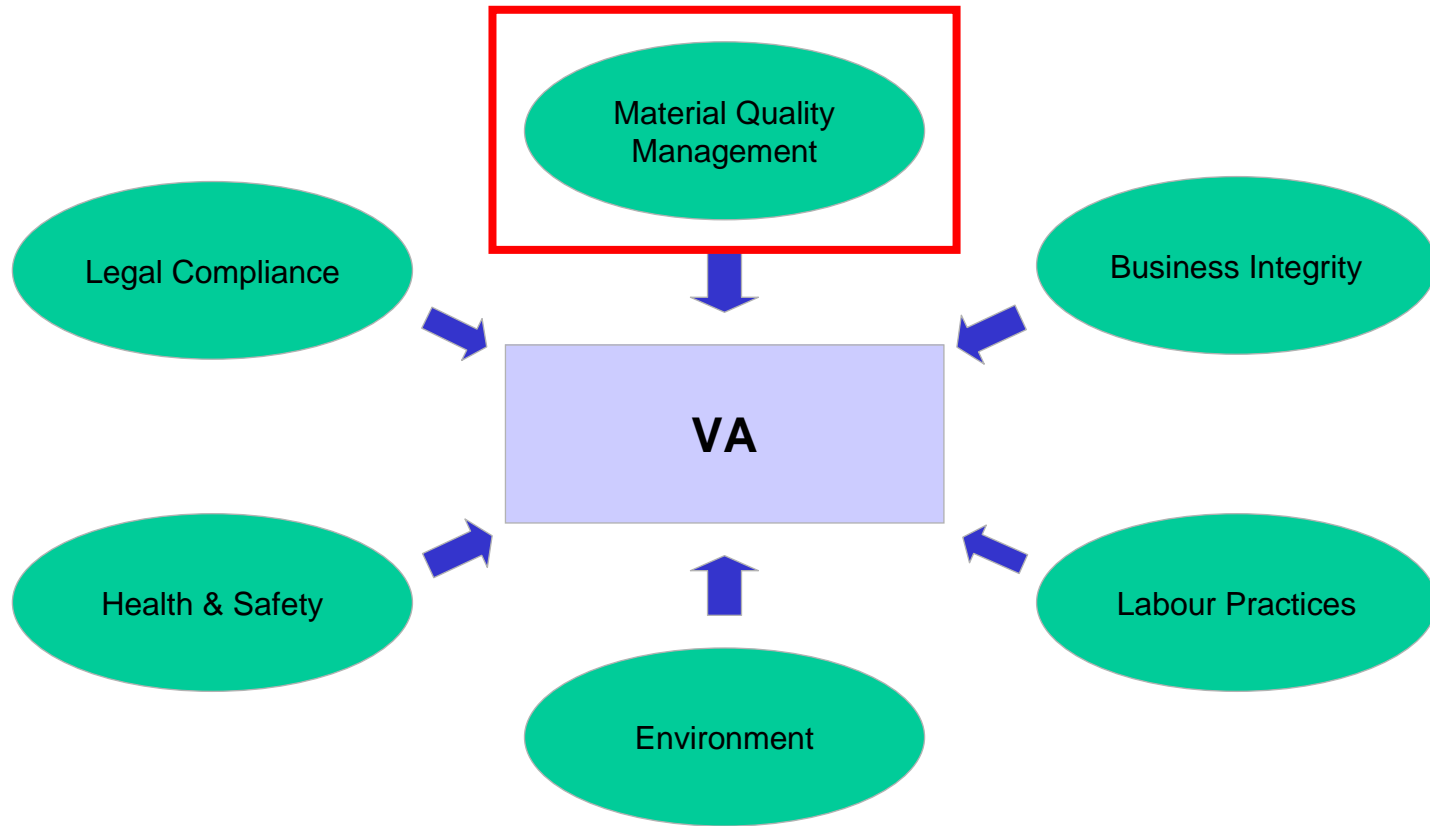
# Supplier Relationship



# Technical Vendor Assurance



# Technical Vendor Assurance



# Material Quality Management - Principles

- Risk based
- Forward control is a guiding philosophy
- Continuous improvement of suppliers and materials
- Verification of compliance and effectiveness
- Importance comparable to own factory quality management
- Integrated into holistic food safety management.....not isolated

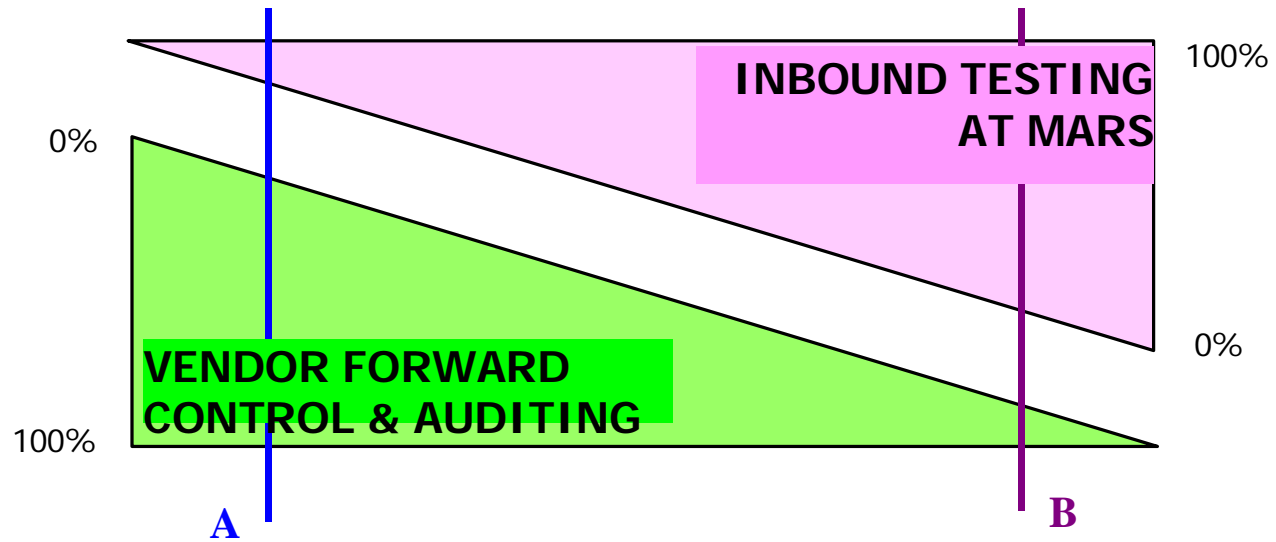


# Material Quality Management - Process

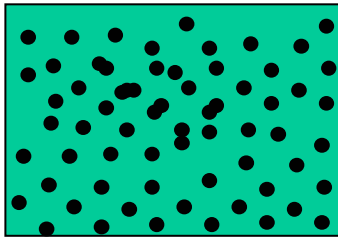
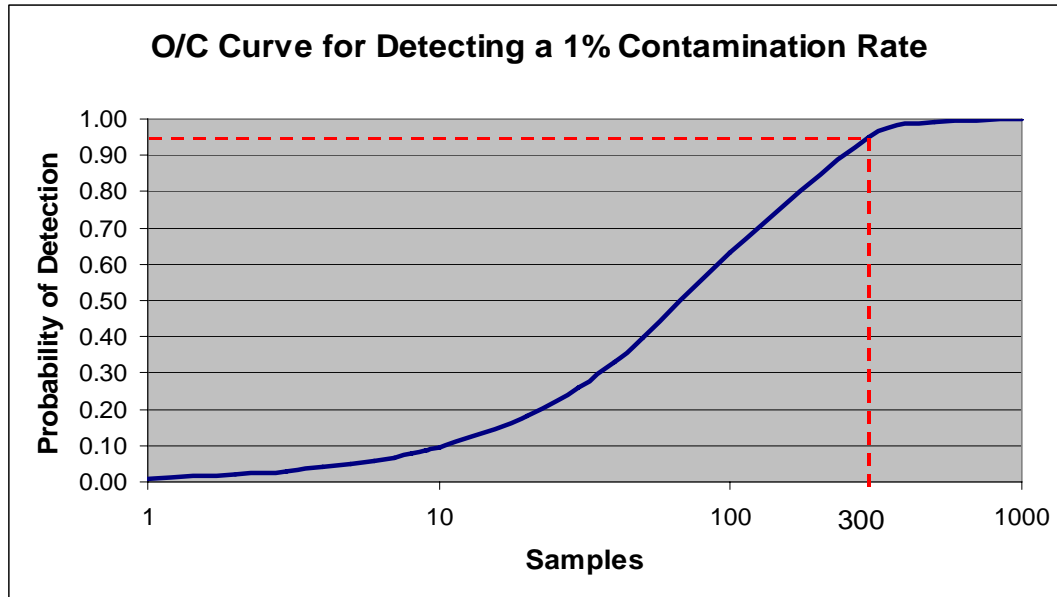
- Assess the hazards and risk inherent to the material
- Assess the hazard and risk inherent to the supplier
- Determine how to manage the risk and measure conformance
  - link MQM with HACCP-based food safety management at the site receiving the material
- Balance forward control at the suppliers and application of inbound testing
- Measure -> drive continuous improvement



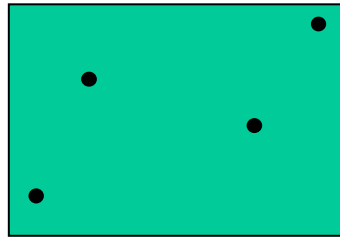
Figure 1: Balance of Vendor forward control vs. 100% inbound analytical testing at the Mars Inc. site



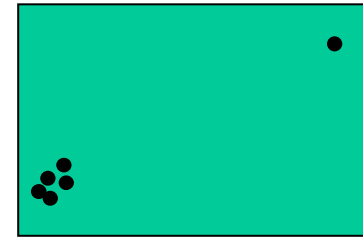
# Sampling has Limitations



High Density Distribution



Low Density  
Random Distribution



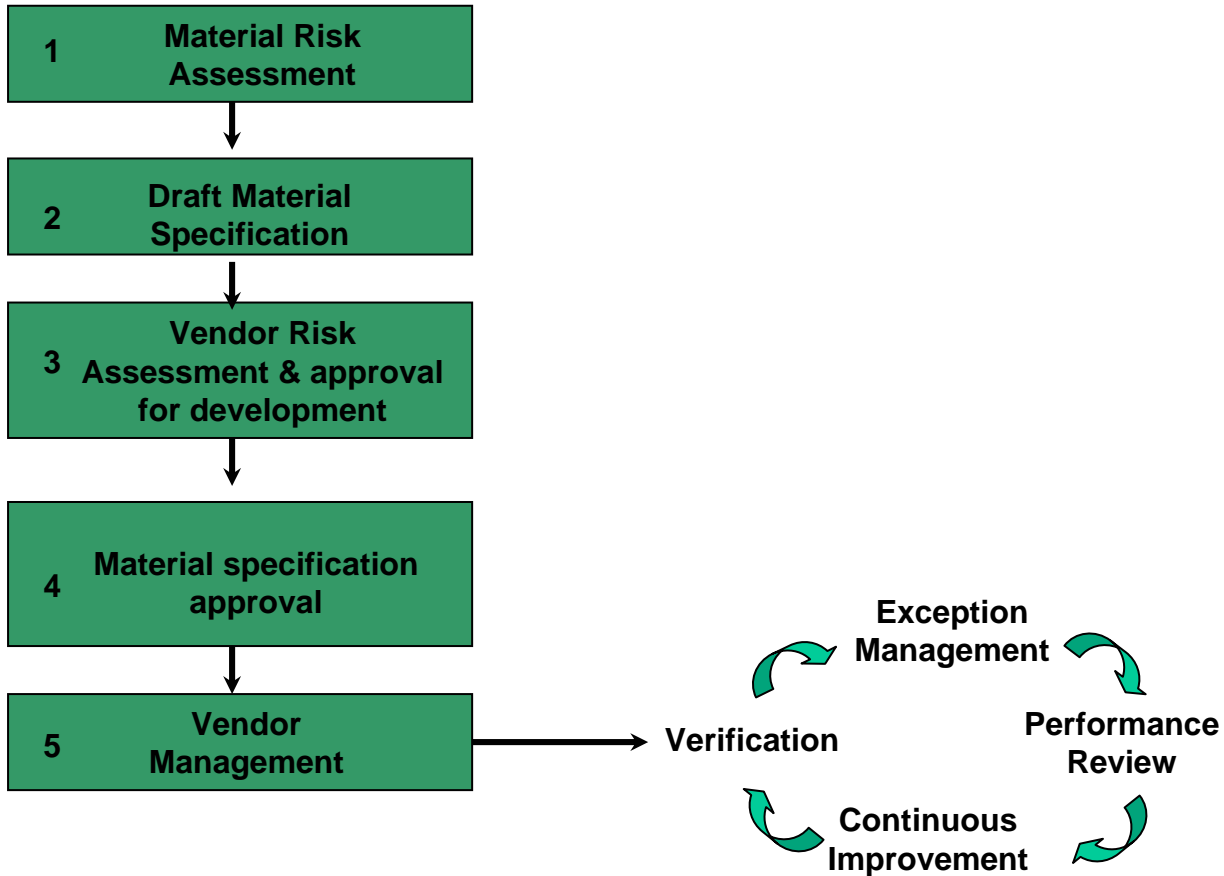
Clumped  
(non Random)





# Summary of Process

**Figure 2: Material Quality Management Process (MQM)**



# Material Risk Assessment

- Identify inherent hazards related to a material
- Determine “severity of Effect” vs “Likelihood of Occurrence” => High / Medium / Low risk
- Assess supplier controls vs own controls
  - what must be controlled at the supplier
  - what will be controlled at own site
  - relationship between Supplier and own HACCP



# Food Safety Hazard Data Sheet

MATERIAL INFORMATION					
MATERIAL					
ITEM CODE (S)					
SITES USED AT					
PRODUCTS USED IN					
DESCRIPTION					
(point of origin, climate etc)					
BIOLOGICAL HAZARD INFORMATION					
HAZARD	SOURCE OF INFORMATION	SEVERITY of EFFECT		LIKELIHOOD of OCCURENCE	
		Risk Rating	Reason	Risk Rating	Reason
CHEMICAL HAZARD INFORMATION					
HAZARD	SOURCE OF INFORMATION	SEVERITY of EFFECT		LIKELIHOOD of OCCURENCE	
		Risk Rating	Reason	Risk Rating	Reason
PHYSICAL HAZARD INFORMATION					
HAZARD	SOURCE OF INFORMATION	SEVERITY of EFFECT		LIKELIHOOD of OCCURENCE	
		Risk Rating	Reason	Risk Rating	Reason
SIGN OFF					
RAW MATERIAL TECHNOLOGIST					
HAZARD ANALYSIS TEAM					
DATE OF LAST REVISION					
REASON FOR REVISION					



**MATERIAL RISK ANALYSIS BY SUPPLIER**

Itemcode/Material	
Supplier	
Intended Use/Site(s) of use	
Owner Name/Date	

Potential FOOD SAFETY hazards associated with MATERIAL	NON APPROVED SUPPLIER			APPROVED SUPPLIER			MASTERFOODS PROCESS ON SITE				Material Food Safety Risk Rating (Pre-VA MR x PI)	OVERALL FOOD SAFETY MATERIAL RISK RATING		
	Hazard Identification	Hazard Source	Severity of effect	Likelihood of occurrence	Significant hazard (Pre VA MR)	Supplier control measure	Effect of control measure	Material risk to MFE (Post VA MR)	Masterfoods process	Masterfoods control measure			Effect of control measure (PI)	Final risk of MFE Finished Product to consumer (Post-MF MR)
<b>BIOLOGICAL</b> Microbiological					Red		Blue				Yellow	Green	Orange	NO1

<b>PHYSICAL</b> Natural					Red		Blue				Yellow	Green	Orange	
Un-natural					Red		Blue				Yellow	Green	Orange	
<b>CHEMICAL</b>					Red		Blue				Yellow	Green	Orange	

Potential FOOD SAFETY hazards associated with VENDOR	Hazard Identification	Hazard Source	Severity of effect	Likelihood of occurrence	Significant hazard (Pre VA MR)	Supplier control measure	Effect of control measure	Material risk to MFE (Post VA MR)	Masterfoods process	Masterfoods control measure	Effect of control measure (PI)	Final risk of MFE Finished Product to consumer (Post-MF MR)	Material Food Safety Risk Rating (Pre-VA MR x PI)	OVERALL FOOD SAFETY MATERIAL RISK RATING
<b>ALLERGENS</b>					Red		Blue				Yellow	Green	Orange	
<b>OTHERS (please specify)</b>					Red		Blue				Yellow	Green	Orange	

Potential FOOD SAFETY hazards associated with TRANSPORT	Hazard Identification	Hazard Source	Severity of effect	Likelihood of occurrence	Significant hazard (Pre VA MR)	Supplier control measure	Effect of control measure	Material risk to MFE (Post VA MR)	Masterfoods process	Masterfoods control measure	Effect of control measure (PI)	Final risk of MFE Finished Product to consumer (Post-MF MR)	Material Food Safety Risk Rating (Pre-VA MR x PI)	OVERALL FOOD SAFETY MATERIAL RISK RATING
<b>BULK TRANSPORT HAZARDS</b>	Any Micro/Phys/Chemical hazards	From previous loads From external contamination	H	H	Red		Blue				Yellow	Green	Orange	
			H	H	Red		Blue				Yellow	Green	Orange	

<b>FUNCTIONALITY</b>					Red		Blue				Yellow	Green	Orange	
<b>PALATABILITY</b>					Red		Blue				Yellow	Green	Orange	

What's the hazard?

What does the supplier do to mitigate the risk?

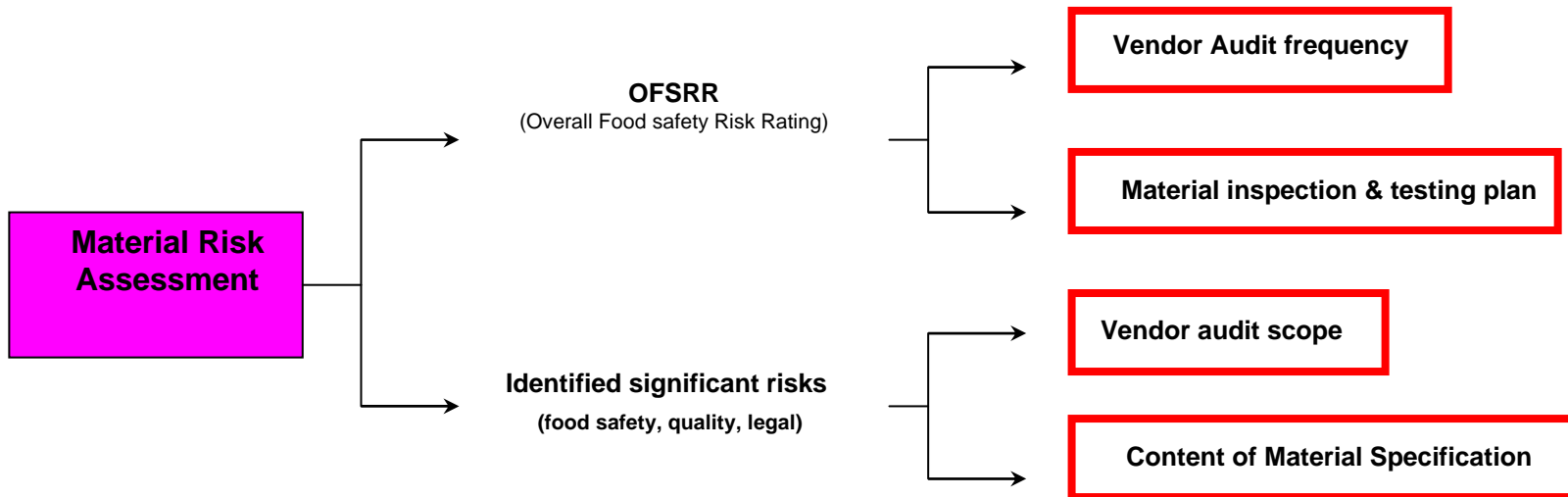
What do you do to mitigate the risk?

Residual risk?



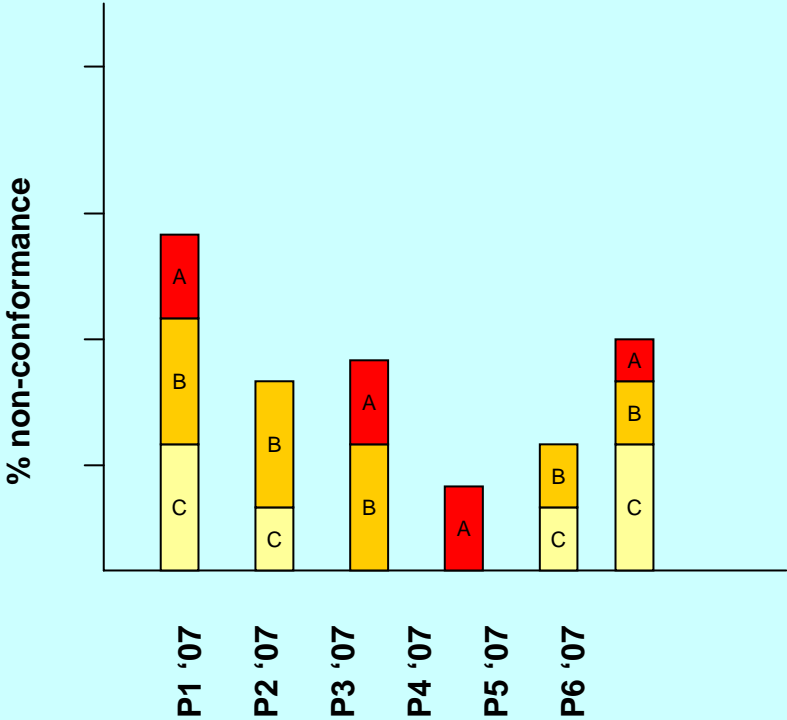
# MRA / SRA Drives Practical MQMP

**Figure 3: How the Material Risk Assessment informs the rest of the MQM process**



# Measure Performance - drive Continuous Improvement

Figure 5 Vendor Performance Metric



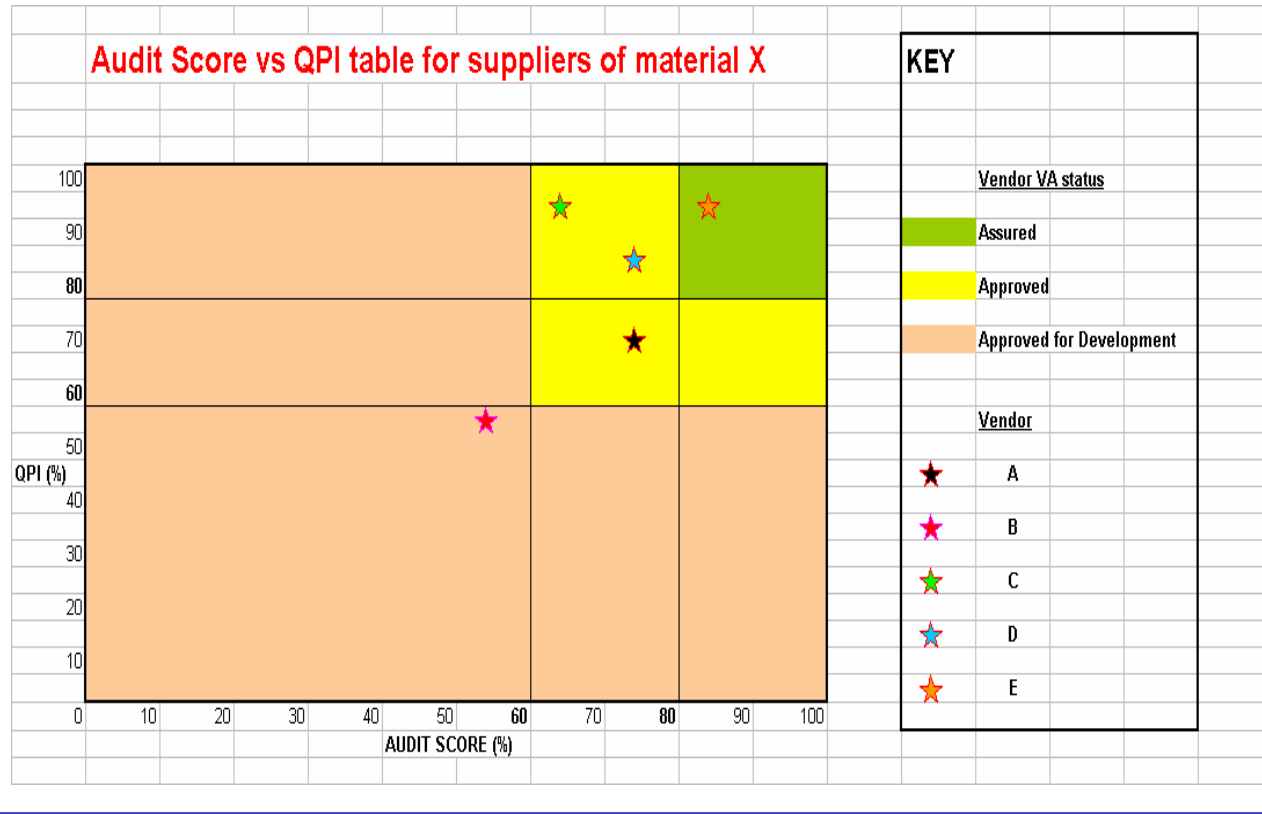
**Where,**

- A, B and C are classifications of incidents (see section 5.2);
- % non-conformance is the sum of exceptions per period as a percentage of the total deliveries for that period.



# Incentive for Suppliers

## Vendor VA status and required thresholds



# Key Challenges

- Quality of MRA / SRA is the basis for success
- Integration between MQM process and conversion HACCP essential
- It's easy to rely on testing of materials and not forward control
- It doesn't end..... continuous improvement of suppliers, the supply base and the overall process





# Back-up Slides



# Example of Raw Material Complexity

	Number of Suppliers	Number of Items
European Snack	230	250
European Pet	600	1200
European Food	187	200
Dubai Snack	26	31

