Sushant University

Key Indicator – 3.4 Research Publications and Awards
(120)

3.4.6 E-content is developed by teachers :

1. For e-PG-Pathshala
2. For CEC (Undergraduate)
3. For SWAYAM
4. For other MOOCs platforms
5. Any other Government Initiatives
6. For Institutional LMS

(15)

Criterion 3 – Research, Innovations and Extension (250)

E CONTENT DEVELOPED BY TEACHERS

E- PG PATHSHALA

EPG- PATHSHALA DETAILS

S.NO	Name of the teacher	Name of the module developed	Platform on which module is developed
1	MS CHANDANA PAUL	CONTAIMINATION SOURCES	EPG PATHSHALA
2	MR SAURAV CHHABRA	CURING	EPG PATHSHALA
3	MR DEEPAK THAKUR	WOMEN DEVELOPMENT	EPG PATHSHALA
4	MS AASHIYAN	STRATEGIC PLANNING & EXECUTION	EPG PATHSHALA

Code and Title of the Paper: F03FC Food Safety and Contamination: Physical Hazards and Allergen Control.

Title of the Module: F03FC19 Contamination Sources

Name of the Content Writer: Ms. Chandana Paul

Food Safety and Contamination: Physical Hazards and Allergen Control.

The objectives

- Understand the Different Types of contamination
- Recognize common Physical & Allergen Contaminants
- Understand the Health Impacts of Contamination
- Develop a Holistic Approach to Contamination Control

Introduction

In the production of food, there are three different kinds of risks: chemical, biological, and physical. Since these items are visible to the unaided eye, consumers are more likely to report them. The contamination cannot be concealed due to their simple detection. Willful adulteration also results in the presence of these pollutants in the food. These items are occasionally present in foods or raw materials as a byproduct of food preparation, such as iron filings in tea leaves.

Definition of a physical hazard

Any foreign material or extraneous object in a food product that might make a consumer sick or hurt them is considered a physical hazard. Bone or bone chips, metal flakes or fragments, injection needles, product packaging bits, stones, glass or wood fragments, insects or other dirt, personal belongings, or any other foreign material not typically included in food goods are examples of these alien things. Raw materials, poorly maintained buildings and machinery, incorrect manufacturing methods, and unethical staff behavior are some of the sources of these pollutants. at order to implement and monitor food production with the goal of exercising control at the places where contamination occurs, processors must decide how to manage physical risks by creating a hazard analysis at key control points (HACCP) at the plant.

Control of physical hazards

Effective pest management in the building, preventative equipment maintenance, appropriate sanitary practices, metal detectors, vendor certification and letters of guarantee, raw material inspection and specification, and x-ray technology (to identify bone fragments) are examples of control approaches. Furthermore, it's critical to maintain and calibrate detecting equipment properly. Additionally, it is crucial to manage the packing materials, follow the right shipping, receiving, and storage procedures, and package completed goods in tamper-proof or tamper-evident packaging. Since a large percentage of reported food product items are personal goods dropped by employees, employee education is also vital. Less evident preventative measures, such as guarded lighting fixtures and limiting contact between pieces of equipment, should also be taken into account

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physical hazards

Metals and other non-biologicals	Biologicals
Metal, glass, stones	Insects
Wood, plastics, jewelry	Hair
Gum,paint flakes, writing pen	Bone
Carcass tags, band-aid	Insects
Meat hooks, wire clips, Blades	Rodent droppings
Strings, thread	Feather

Conduct of hazard analysis

The sources of the physical hazard must be identified. Following are some of the items to be checked:

- Raw Materials
- Facility
- Processing Equipment Processing Equipment
- Employee Practices

Controls for physical hazards /foreignmaterial

- Plant GMP's
- Employee training/ retraining
- Ingredient specifications
- Prerequisite programs for HACCP
- Letters of guarantee
- Practices to identify and record sources of physical hazards
- Monitoring and documenting controls

Health effects

Physical contaminants are substances thatbecome part of a food mixture. They may notchange or damage the food itself. However,their presence can create health hazards forthe consumer. For instance presence of metal filings orbroken pieces of glass in foods will not spoil food but can cause injury if swallowed. Other physical contaminantslike packaging material, insects, androdent droppings spoil the taste and aesthetics.

Insect and rodent contamination createstwo major problems. The first one is that they can eat large volumeof foodand/or destroy. The second concern is that the microbe may enter the food because

ofthe insects or rodents. For example, flies pickup microbes on their hairy feet. When flieswalk on food, microbes can transfer from theflies' feet to the food. Insects and rodents alsodamage the surfaces of foods such as fruitsand vegetables. This creates openings thatallow microbes to enter and multiply withinthe foods.Insects and rodents can contaminate thefood supply at any stage of growth or production.For example, some insects lay eggs inwheat while it is growing in fields.On the other hand, cockroaches are likely toenter the wheat supply during the processingstage. Their presence is less acceptable andcan be controlled by the foodmanufacturer.

Health risks due to physical hazards can be on the following:

• Digestive tract --esophageal laceration, esophageal perforation, pharynx, stomach, intestine, fistula

• Respiratory tract—choking, occlusion of the airway, children are at greater risk, partial lung collapse, secondary infection, destruction of lung tissue from retained material

• Mouth and teeth—laceration, damage to gums and teeth

• Extremities (Hands) --Lacerations on the hands during food preparation

Other effects

• Complaints of illnesses

• Nausea and vomiting

• Diarrhea

• Headache, fever and dizziness

• Chest pain

Prevention of Common Physical Hazards

There are many ways food processors can prevent physical hazards in food products. Every step of the operation must be checked for potential sources of contamination for example inspection of raw materials and food ingredients for field contaminants, such as stones in cereals.

HACCP

The presence of foreignmaterial other than bone may pose apotential hazard, and each instanceshould be considered on a case –bycase basis, irrespective of size. The decision to include a physicalhazard control in a HACCP plan may depend on past complaints from consumers, assessment of the plant GMP's, the extent of HACCP Prerequisite records and monitoring.

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Hazard Analysis

The HACCP Team must identify and list all physical hazards in the following:

Ingredients

- Finished product
- Handling procedures
- Manufacturing operations
- Storage
- Distribution

Other measures to ensure food safety are to:

- Handle food according to Good Manufacturing Practices (GMPs). (Ex: avoid inclusion of physical hazards such as jewelry or false fingernails in food products by using proper personnel practices.)
- Eliminate potential sources of physical hazards in processing and storage areas. (Ex: use protective acrylic bulbs or lamp covers to prevent contamination by breakable glass.)
- Install an effective detection and elimination system for physical hazards. (Ex: metal detectors or magnets will detect metal fragments in the production line while filters or screens will remove foreign objects at the receiving point.)
- Establish an effective maintenance program for the equipment in facility to avoid sources of physical hazards such as foreign materials that can come from worn out equipment.

Detecting and Eliminating Physical Hazards during production

There are several methods available to detect foreign bodies on food processing production lines:

- Magnets can be used to attract and remove metal from products.
- Metal detectors can detect metal in food and should be set up to reject products if metal is detected. Equipment should be properly maintained to ensure it is always accurate and doesn't produce false positives

• X-Ray machines can be used to identify hazards such as stones, bones and hard plastics, as well as metal

Allergen Contamination

Allergen contamination can occur when food products are inadvertently contaminated with allergenic proteins that can cause reaction, even life threatening, inindividuals having food allergies to those proteins. Some of the most common food allergies are to **milk,eggs**, **fish, shellfish, wheat, soy, peanuts,and tree nuts.** Allergens are recognized as an important food safety issue. Hence all precautions must be taken to ensure safety from allergen point of view.

Food intolerance

Foods can also cause a variety of mild to moderate adverse reactions in some individuals asa result of the presence of natural or added substances. Such reactions are highlyindividualistic and are generally related to an underlying condition which is aggravated by arelatively high exposure to a particular food or food ingredient. There is currently little information on the underlyingcauses and the factors which can influence the prevalence and severity of food intolerance.The food intolerance is different from food allergy. In allergenic reaction there is IgE mediated immune reaction.

Allergy symptoms

The time to manifest allergic responses varies between individuals. It can happen immediately after consuming it or after several hours. The symptoms may be itching in around the mouth, hives, tightening of throat, vomiting, abdominal cramps, diarrhea, wheezing, shortness of breath, reaction on face, hands, loss of consciousness and even death.

Prevention of cross-contact during processing

Scheduling of processing runs

• Schedule long runs of products containing allergenic ingredients in order to minimize changeovers.

• Segregate production areas for allergenic and non-allergenic products. If this is not possible, manufacturing of non-allergenic foods before processing foods with allergens must be planned.

• Schedule sanitation immediately after production of foods containing allergenic ingredients.

• When product design permits, add allergenic ingredients as late in the process as possible.

During manufacture

• Ensure the traffic patterns of raw materials, packaging supplies, and employees are limited during the manufacture of allergen containing products that do not lead to cross-contact.

• If possible, have dedicated processing equipment and lines to prevent allergen cross-contact.

• Whenever possible, make products with similar allergens on the same equipment.

• For production lines with crossover points, prevent allergenic foods from falling onto non-allergenic production lines.

• When processing lines are in close proximity, minimize the allergen risk by adding physical barriers to separate allergenic and non-allergenic production lines.

• Dedicate tools, containers and utensils — and clearly mark them or use a color code to identify allergenic ingredient and/or product. When dedicated utensils and equipment are not possible, the items must be cleaned prior to using in the manufacture of non-allergenic products.

• Minimize the reuse of processing and/or cooking media such as water or oil. If cooking media is reused, test to validate there is no cross-contact for non-allergen products.

• Restrict personnel working on processing lines containing allergenic ingredients from working on non-allergenic production lines. Visually identify which employees are working on a line that contains allergens (different colored uniform, hair net, etc.).

• When products containing allergens are being manufactured, ensure allergens are identified throughout the process including visually tagging or color coding equipment

Maintenance and engineering

• Purchase and design equipment using sanitary design principles.

• Maintain equipment to ensure systems are operating as designed.

• Design traffic patterns and airflow in the production facility to prevent allergen cross-contact.

• Ensure equipment is positioned for easy access to clean and inspect.

• Assure maintenance procedures for working on processing lines eliminate cross-contact to non-allergen containing products –both during operations and during preventive maintenance.

• Determine the need to separate allergenic and non-allergenic production lines with physical barriers, separate employees, or other methods to prevent cross-contact.

• For production lines with crossover points (conveyor belts, etc.), prevent allergenic foods from falling onto non-allergenic production lines.

• Assess the risk of migration of allergenic dust to non-allergen product line during processing

The above precautions would prevent cross contaminatio

Supplier Management

The focus at this step should be the clear identification of incoming raw materials and ingredients and minimizing the possibility of cross-contact. Allergenic raw materials, semi-finished products, etc., should be identified upon receipt and, if possible, kept in sealed packaging or separate from each other and from other foods. All deliveries should be checked before unloading commences. For all deliveries (including allergenic materials) consideration should be given to the need for a special "allergen spillage" procedure, analogous to glass breakage procedures.

Storage

• Store allergenic ingredients or products separately to prevent cross-contact. Protocols may include:

- Using clean and closed containers

- Designating separate storage areas for allergenic and non-allergenic ingredients and/or products. When segregated storage is not possible, use other methods such as not storing allergens over non-allergens, storing like allergens (milk and whey) together, etc.

- Using and documenting clean up procedures for spills or damaged containers of allergens

- Using dedicated pallets and bins

- Using clearly designated staging areas for allergenic foods and ingredients

Raw Materials Handling

might be Production includes ingredient dispensing, recipe make-up, mixing the raw materials and ingredients, processing them and then packaging the finished product. Critical allergen risks related to equipment and factory design include incorrect equipment selection, cross-contact between materials as well as between products produced on the same line. Good Manufacturing Practices (GMP) forms the basis for minimizing these risks.

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Cleaning

Where there is a significant risk of cross-contact from shared equipment then the equipment must be capable of being cleaned effectively. Appropriate protocols must be in place to verify and validate the cleaning regime.

Air

Implications of potential airborne contamination should be assessed. Dedicated air handling units with controlled pressure between areas or dust extraction systems required for very dusty production areas. Accumulations of settled allergenic material on flat surfaces (e.g. machine guards, window sills, shelves) should be cleaned up.

Recipe Verification

The first requirement to avoid allergen risks is to ensure the correct materials are used in the recipe. Systems therefore need to be designed to avoid recipe mistakes. These systems will depend on the actual production facility, and can include not only verification of the recipe at the time of addition of materials, but also software and engineering design features to avoid use of the wrong ingredient(s). An example would be a system which checks barcodes in the recipe against those of the raw materials or ingredients when these are weighed out for a pre-mix and prevents the operator from continuing if they do not match. Rework represents a special case of an “ingredient” which these systems also need to consider.

Packaging and Post-Production Controls

Incorrect packaging and/or labeling is a major cause of allergen-related product recalls. Procedures for checking that the correct labels are applied to products should be implemented and audited regularly, so that accurate information is provided to allergic consumers. Checks should be in place between processing and packing to ensure the correct packaging is used, for example, with the use of automated label verification systems.

If packaging materials are stored (even for short periods) in processing areas, there is the potential for cross contact with allergenic material. Production planning should include the order in which different products are manufactured and packaged. Special attention must be paid when the production of bulk volumes takes place at one location and the packaging of the finished product at another. In such cases, the order of packaging must be designed to reduce the risk of cross-contact by allergens and must include effective cleaning routines.

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Training Staff

Provide general training on allergen awareness and control for all employees at all levels of the company.

• Provide specific documented training to employees as dictated by their job responsibilities.

• In all training, include information on the reasons protocols are required—as well as the potential consequences should the plan not be followed.

Identification and labeling ingredients

Identify allergenic ingredients by a mark or tag (or color code) —and isolate allergens from non-allergenic ingredients/products in storage like for example,egg;fish;peanuts;milk;nuts – Almond, Hazelnut ,Walnut , Cashew,Pecan nut, Brazil nut, Pistachio nut.Soya,sesame,celery,mustard, andsulphur dioxide and sulphite.

Product Label Review & Label/Packaging

• Packaged foods are regulated by the FSSAI Act of 2006 in India. It is required that product approval must be taken by the company

• It is important to know companies cannot arbitrarily add“may contain” or other precautionary labeling

Good manufacturing practice (GMP) is essential for effectivereduction of adverse reactions, precautionary labelingshould not be used in lieu of adherence to GMP

• Ensure label approval processes are in place for new productsor changes to current products

• Review incoming labels prior to receipt for accuracy

• Ensure product specification and formulation changes areimmediately reflected on labels. Consider approaches tohighlight newly introduced allergen components

• Monitor, document, and verify the correct label at allchangeovers as they occur.

• Discard all out-of-date labels or packaging in a timely manner.

• Implement proper inventory control procedures forpackaging materials.

• Implement proper packaging staging control procedures.

Food manufacturers have recognized that in certainsituations, there is a risk of gross-contamination of a food with nutsand/or peanuts, which are not deliberately added to the food. This riskcan be conveyed

to customers in advisory warning statements such as “maycontain nuts”. More recently this sort of advisory labelling has beenextended to seeds such as sesame and other allergenic foods that canalso trigger potentially fatal anaphylactic reactions such as egg, milk, fishand shellfish.

Ingredient Labeling

Labeling is a very important risk management and riskcommunication tool.Foods are known to cause allergic hypersensitivity ina significant proportion.Ingredients and processingaids originating from a substance or product causingallergies or intolerances are required to be declared forpre-packed and for non-pre-packed foods, unless thederivatives are specifically exempted by the country’s legislation.

As regards prepacked foods, this information mustbe provided on the package or on a label attachedthereto. For non-prepacked foods, countriesmay adopt national measures concerning the meansthrough which the allergen information is to be madeavailable and, where appropriate, their form ofexpression and presentation.

Labeling of these ingredients, processing aids,substances or products causing allergies orintolerances is obligatory when they are deliberatelyused in the manufacture or preparation of a food andare still present in the finished product, even if in analtered form.

In practice, a food operator will need to:

Ascertain that the allergen status is fully described in raw material, packaging, labeling and specifications declarations. For instance, generic terms such as ‘flavoring, spices’ are not appropriate where these substances originate from allergenic sources according to European legislation. Assess each supplier and the application of allergen management practices in their operations and document that assessment. For instance, this can be achieved by means of a questionnaire and, where appropriate, an audit. Understand the allergen risk analysis from each supplier in order to apply the analysis appropriately and consistently to their products. Ensure that information from suppliers is correctly recorded; including complete allergen status i.e. intentionally present allergenic derivatives as well as potential cross-contact. Lay down procedures on how information received from the supplier is handled/processed/acted upon. Make sure a change notification process is in place with the supplier, so that newly identified allergen risks for ingredients that are already being supplied, are properly notified and can be acted upon. Where several alternative ingredients can be substituted in a product, e.g. alternative seasonings and raising agents with carriers or a particular ingredient may need to be purchased from different suppliers, the food operator needs to ascertain the impact on the allergen status of the resulting product(s).

Subject: Food and Nutrition

Back to Subjects

Paper

P-03. Modern Approaches to Food Preservation (40)

Module

M-18.Curing

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Code and Title of the Paper: F09MF Modern Approaches to Food Preservation
Code and Title of the Module: F09MF18 Curing
Name of the Content Writer: Mr. Saurav Chhabra

Curing

Quadrant – I

Introduction

Code and Title of the Paper: F03WC Women and Their Influence in Christianity

Title of the Module: F09WC19 Women development

Name of the Content Writer: Mr. Deepak Thakur

QUADRANT-3

Learn More

Suggested Readings

Becker, Carol E. (2000) *Men and Women Serving Together in Faith*, San Francisco, CA : Jossey – Boss.

- Clinton, J. Robert (1995) *Gender and Leadership : My Personal Pilgrimage*, Altadena, CA : Barnabas Publishers.
- Fee, Gordon D., and Douglas Stewart (1993) *How to Read the Bible for All its Worth* 2nd CD Grand Rapids, MI : Zondervan
- Helgesen, Sally (1995) *The Female Advantage : Women's Ways of Leadership* New York : Doubleday.
- Grady, J. Lee (2000) *Ten Lies the Church Tells Women : How the Bible has been misused to keep Women in Spiritual Bondage,* Lake Mary, FL : Creation House.
- Consevant, W., (1960) *A dictionary of Bible Life and Times,* New York : Oxford University Press.
- Price, Eugenia, (1964) *God Speaks to Women Today,* Grand Rapids : Zondervan Publishing House.
- Keener, Craig S. (1992) *Paul, Women & Wives : Marriage and Women's Ministry in the Letters of Paul,* Peabody : MA : Hendrickson Publishers.

Code and Title of the Paper: F03WC Women and Their Influence in Christianity

Title of the Module: F09WC19 Women development

Name of the Content Writer: Mr. Deepak Thakur

- Swidler, Leonard (1979) *Biblical Affirmations of Women,* Philadelphia, PA : Westminster.

- Tucker, Ruth A., and Robert Liefield (1987) *Daughters of the Church*, Grand Rapids, MI : Zondervan Academic Books.

- *The Holy Bible,* New International Version (2011), NIV : U.S.A. : Biblica Inc.

- Corswant, W., (1960) *A Dictionary of Bible Life and Times,* New York : Oxford University Press.

Interesting Facts

- Sarah, Rebekah, Rachel, Miriam, Deborah, Lydia, Ruth and Esther were strikingly distinguished women of the Bible.

- In Christianity woman is esteemed as a valued companion in life and work, and the better half of man.

- God selected Mary a humble Jewish maiden for the virgin birth of Jesus.

- Ruth, a gentile by birth, has become a universal example of an ideal daughter-in-law.

- Esther, who became the queen of King Ahasuerus is one of the only two books (or chapters) of the Bible, named for women (Ruth is the other)

WEBLINKS

Women and Christianity

http://www.theopedia.com/christian-views-attitudes-and-beliefs-about-women/

http://www.religioustolerance.orglife.bibl.htm/

http://www.bbc.co.uk/schools/gcsbitesize/rs/prejudicechristianityrev3sht.ml/

http://bible.org/article/christianity-best-thing-ever-happened-women/

Code and Title of the Paper: F03WC Women and Their Influence in Christianity

Title of the Module: F09WC19 Women development

Name of the Content Writer: Mr. Deepak Thakur

GLOSSARY

- Yahweh – The Old Testament identifies Yahweh as the Almighty Creator also called Jehovah or the 'LORD'.
- Omnipotent – in theology, the meaning is 'all powerful'.
- Omniscient – knowing everything. Commonly used to denote the powers of God.
- Christology – A theological study of the actions, nature and character of Jesus Christ.
- Old Testament – the first part of the Christian Bible, containing the scriptures of the Hebrews.
- New Testament – the second part of the Christian Bible, concerned with the life and teachings of Christ and his earliest followers.

Paper: 4, Strategic Planning & Execution

Module: 3, STRATEGIC PLANNING & EXECUTION

Principal Investigator	Prof. S P Bansal Vice Chancellor Maharaja Agrasen University, Baddi
Co-Principal Investigator	Prof YoginderVerma Pro–Vice Chancellor Central University of Himachal Pradesh. Kangra. H.P.
Paper Coordinator	Dr. Anil Gupta Senior Assistant Professor University of Jammu, Jammu 180006.
Content Writer	Prof Aashiyan Vatel Hotel and Tourism Business School Sushant University, Haryana

ITEM	DESCRIPTION OF MODULE
Subject Name	**MANAGEMENT**
Paper Name	**STRATEGIC PLANNING & EXECUTION**
Module Name/ Title	**STRATEGIC PLANNING**
Module Id	**Module No – 3**
Pre-requisites	**Understanding of strategy, plans and strategic management**
Objectives	**Understanding the strategic planning & execution**
Keywords	**Strategic planning, Strategic management process, SMP**

QUADRANT - I

Module 3 : Strategic Planning & Execution
1. Learning Outcomes
2. Phases in Strategic Management Process (SMP)
3. Elements of SMP
4. Comprehensive Model of SMP
5. Wheelen & Hunger Model of SMP
6. Intended and Realised Strategies
7. Participants in SMP
8. Strategic Drift
9. Learning Organisations
10. Summary

1. Learning Outcomes

After studying this module, you shall be able to

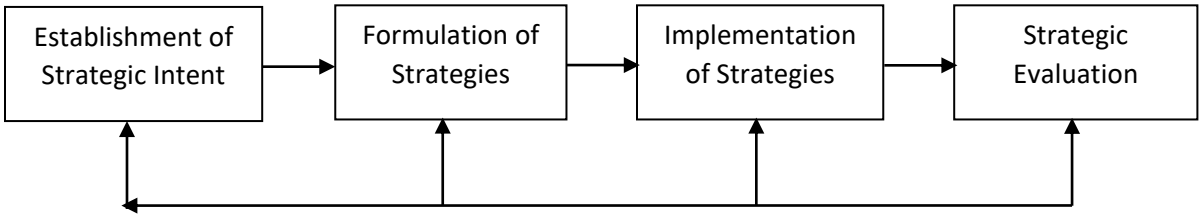
1. Identify different phases in strategic management process.
2. Understand various elements of strategic management process.
3. Learning different models of strategic management process.
4. Understanding Intended and Realised Strategies.
5. Learn about the approaches to strategic management process.
6. Learn about various participants in strategic management process.

2. Phases in Strategic Management Process (SMP)

"Strategic management is the dynamic process of formulation, implementation, evaluation and control of strategies to achieve the organisation's strategic intent."

This definition emphasises on four stages of the strategic management process namely formulation, implementation, evaluation and control. The four phases of strategic management process are depicted as –

Four Phases of Strategic Management Process



(Source – Kazmi, 2010. Strategic Management and Business Policy, 3rd Edition)

The first stage relates to establishment of strategic intent for the organisation. Strategic intent is the list of objectives that an organisation creates for itself. This includes defining its vision, mission, objectives and business. The aim of strategic management is effectively realising the strategic intent.

In the second stage a single strategy or few strategies are formulated, the stage is also called strategic planning. Essentially, this is an analytical phase in which strategists think, analyse and plan strategies.

The third phase of implementation is the 'putting into action' phase. The strategies formulated in the previous stages are implemented through a number of executive and managerial actions.

Lastly, the fourth stage of evaluation and control involves assessing whether the formulated strategies were apt and whether the same were implemented effectively. The outcomes of assessment help in suggesting corrective actions ranging from making minor changes to severe reformulations of strategies.

These four stages are considered to be chronologically linked and each following phase provides a feedback to the previous phases. The feedback arising from each of the successive phases is meant to revise, reformulate or redefine the previous phases, if necessary.

3. Elements of SMP

Each phase of the strategic management process consists of a number of elements, which are discrete and identifiable activities performed in logical and sequential steps. The following are considered as essential elements of SMP –

A. Establishing the hierarchy of strategic intent –

A. Creating and communicating a vision

B. Designing a mission statement

C. Defining the business

D. Adopting the business model

E. Setting objectives

B. Formulation of strategies –

F. Performing environmental appraisal

G. Doing organisational appraisal

H. Formulating corporate-level strategies

I. Formulating business-level strategies

J. Undertaking strategic analysis

K. Exercising strategic choice

L. Preparing strategic plan

C. Implementation of strategies –

M. Activating strategies

N. Designing the structure, systems and processes

O. Managing behavioural implementation

P. Managing functional implementation

Q. Operationalising strategies

D. Performing strategic evaluation and control –

R. Performing strategic evaluation

S. Exercising strategic control

T. Reformulating strategies

4. Comprehensive Model of SMP

The strategic management process is elucidated with the help of a model consisting different phases which include the above mentioned elements.

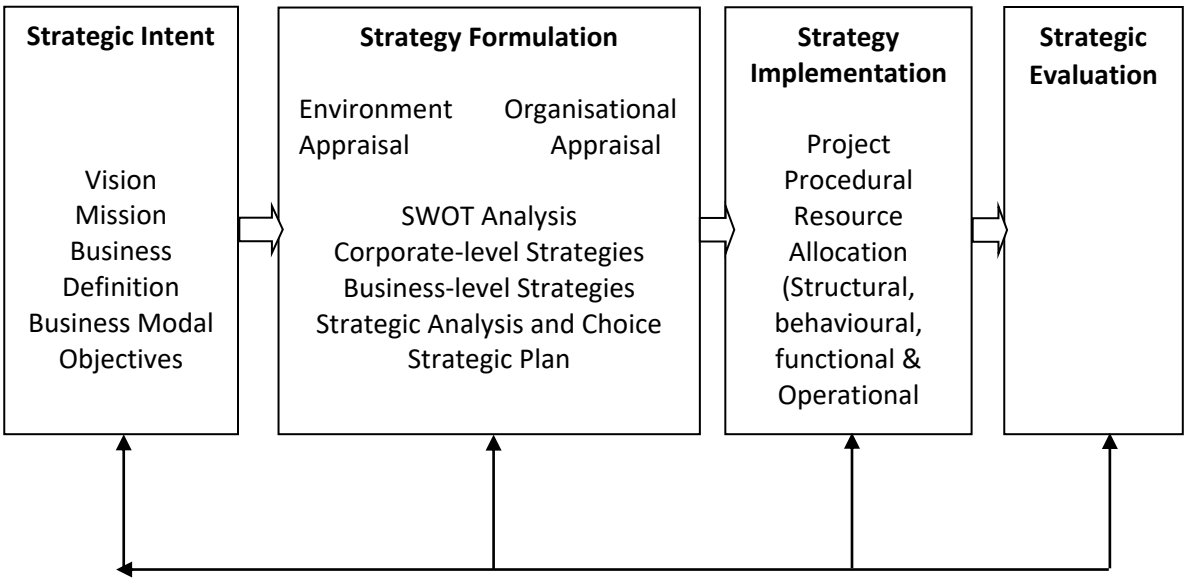
The steps of the process are discussed in brief as –

A. The hierarchy of strategic intent lays foundations for the strategic management of an organisation. The intent establishes the vision, mission, business definition, and objectives for the organisation. It makes clear what an organisation stands for, the vision highlights what the organisation wants to achieve in long run. The mission relates the organisation to the society at large. The business definition defines the businesses of the organisation while the business model depicts how the organisation creates revenue. The objectives of the organisation explain what is to be achieved in a set time frame and serve as benchmarks for measuring performance.

B. Environmental and organisational appraisal identifies various opportunities and threats functional in the environment, as well as defines the strengths and weaknesses of an organisation. In such a manner, enables organisation to take advantage of existing opportunities by using its strengths and reduce the impact of threats and minimise the weaknesses.

The model suggested by different authors as a comprehensive model of strategic management is exhibited in the figure –

Comprehensive Model of Strategic Management



(Source – Kazmi, 2010. Strategic Management and Business Policy, 3rd Edition)

C. Formulation of strategies at four levels viz. corporate, business, functional and operational takes place in an organisation. The major strategies are formulated at corporate and business levels where corporate strategies relate to the strategic decisions regarding the business, business strategies focus of building competitive advantage for the business.

D. Strategic alternatives and choices are necessary for defining various alternative strategies and selecting the most appropriate strategy keeping in view the environmental opportunities and threats as well as the organisational strengths and weaknesses. Strategies are defined and selected at corporate and business-level. The process of strategy selection includes strategic analysis and choice. As a result, a strategic plan ready for implementation.

E. For strategy implementation, the developed strategic plan is applied through various sub-processes like project implementation, procedural implementation, resource allocation, structural implementation, behavioural implementation, and functional implementation. Project implementation deals with setting up the organisation while procedural implementation deals with defines different regulations within which Indian organisations have to work. In resource allocation, resources are procured and committed for the plan. The structural aspect defines the organisational structure and systems to meet the requirements of the strategy. The behavioural aspect deals with the leadership style, corporate culture, corporate politics, personal values, ethics, social responsibility etc. and the functional aspect relates to different functional areas for the policies to be formulated.

F. The last phase is strategic evaluation which assesses the performance of the organisation and the results of the implemented strategies. The results of the assessment help in exercising strategic control over the future strategic management process.

5. Wheelen & Hunger's Model of SMP

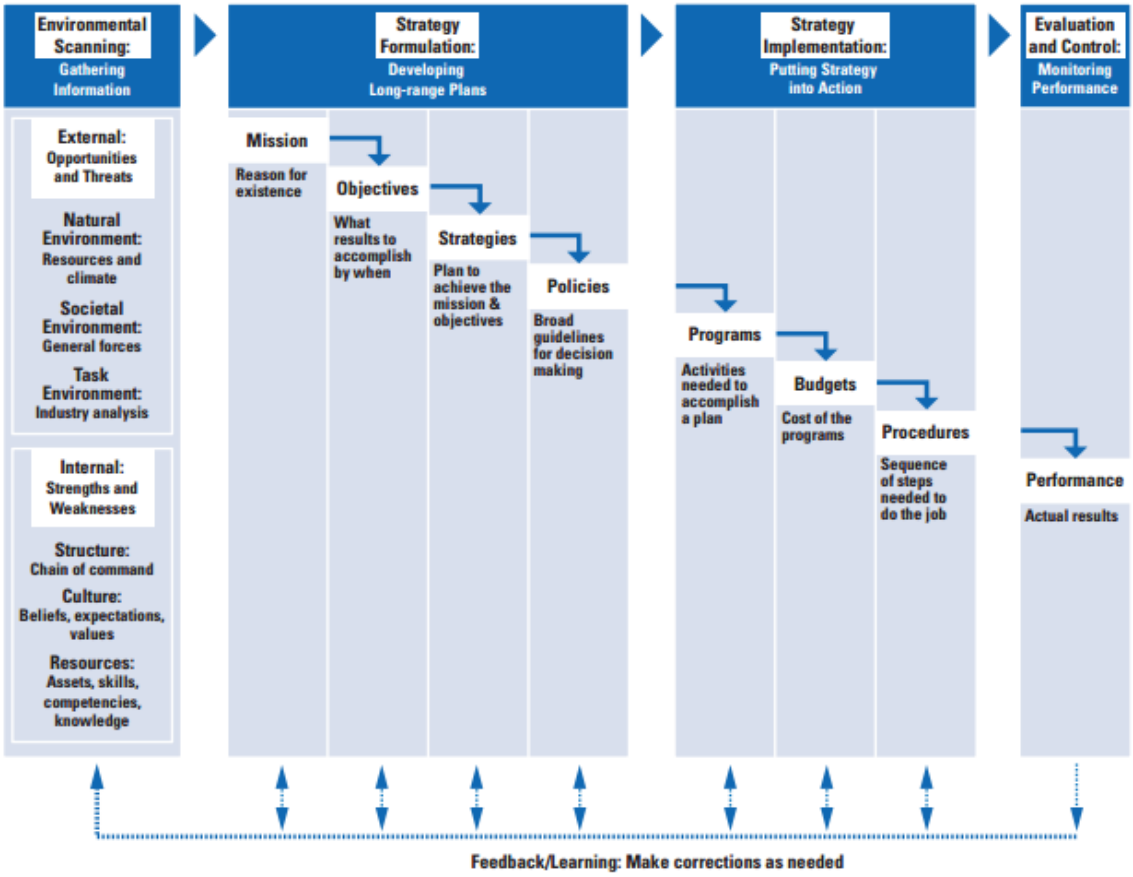
Another model on strategic management process proposed by Wheelen & Hunger, includes four steps namely environmental scanning, strategy formulation, strategy implementation, evaluation and control, and feedback/ learning process.

A. *Environmental scanning* is the observing, analysing and spreading information relating to the business environment both external and internal to all the important people in an organisation. The scanning process enables an organisation to identify strategic factors—which have a bearing on the future of the organisation. Environmental scanning can be done through SWOT analysis, which helps in identifying its Strengths and Weaknesses, and also facilitates the company in recognising Opportunities and Threats that exist in its business environment.

B. *Strategy formulation* relates to developing long-term plans on the basis of environmental opportunities and threats keeping in view the strengths and weaknesses (SWOT) of a company. Strategy formulation consists of outlining corporate mission, its objectives, making strategies and policy framework. An organisation may formulate its objectives in relation to - profitability, efficiency,

growth, shareholders' wealth, utilization of resources (ROE or ROI), reputation, contributions to employees, contributions to society, market leadership, technological leadership etc.

Wheelen & Hunger's Model of Strategic Management



(Source: Wheelen & Hunger, "Strategic Management and Business Policy: Toward Global Sustainability," adapted from "Concepts of Management," presented to Society for Advancement of Management (SAM), International Meeting, Richmond, VA, 1981.)

C. *Strategy implementation* is concerned with putting the formulated strategies and policies into action. This is done by making programs, budgets and processes; and may also involve alterations in the organisation structure, culture etc. The strategies are generally implemented at the middle and

lower management levels and are reviewed by the top management. This stage also involves making regular decisions on daily basis, thus is also referred as operational planning.

D. *Evaluation and control* is exercised by comparing actual performance with the previously set objectives. The result of this exercise helps managers and management is taking corrective measures to improve the performance. This process further helps in identifying the problems in the implemented strategic plans and providing useful information to improve the future plans and performance. Evaluation and control, thus, improves an organization's performance, which is generally measured in terms of profits and ROI.

E. *Feedback/ Learning Process* - A business unit develops strategies and programs before undertaking any exercise but it must regularly take corrective actions or decisions with regards to the existing plans. For example, poor performance (as measured in evaluation and control) usually indicates that something has gone wrong with either strategy formulation or implementation. It may also help in identifying some of the key variable which might have been ignored during environmental scanning and assessment.

6. Intended and Realised Strategies

All strategic management processes start with planned or intended strategies. However, the actual or realised strategy may be different. Taking the idea that an organisation's intended strategy is changed during its implementation, Mintzberg and Waters argue that new strategy emerge to modify and change the planned strategy, so that over time the realised strategy is different from the one originally intended by senior managers. Thus, a strategy is a mixture of a senior management's deliberate strategy, which is a planned strategy designed by senior managers for implementation at other organisational levels, and emergent strategy, which is strategy not foreseen by senior management that arises during the implementation of deliberate strategy. Between intended and realised strategies, there are emergent strategies. The intended strategy is the one originally planned: this can be emergent in its original, modified or an entirely different form because of developing situations. The realised strategy

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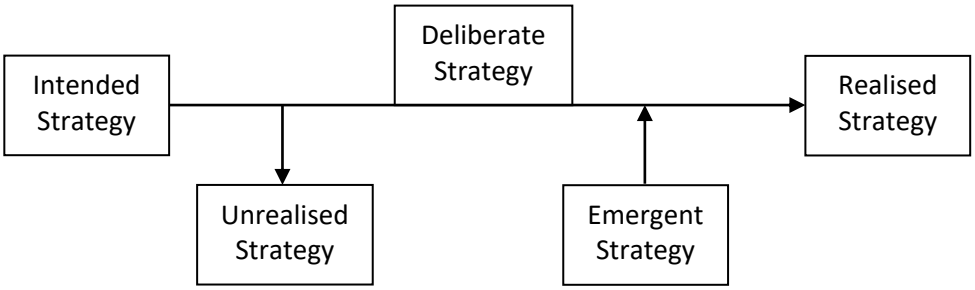
is what is actually implemented because of changed internal or external circumstances. Wright and others (1998, 1997) have dealt with it at length.

Emergent strategies are usually suggested by functional or operating-level managers. Higher level management has to assess the emergent strategy in the context of the already approved strategy (intended strategy) and decide whether the emergent strategy suits the organisation's objectives, needs and capabilities. This would also involve assessment of the changed environment which necessitates the emergent strategy. Usually, intended strategies are top-down process whereas emergent strategies are a bottom-up approach. Therefore, the effectiveness of emergent strategy depends on the flow of communication between top management and functional-level management. In most cases, strategies are a mix of intended and emergent strategies. The unrealised intended strategy will be either dropped or replaced by an emergent strategy. The relationship between intended, emergent and realised strategies is depicted in the figure below –

Intended Strategy to Realised Strategy



(Source: Witcher & Chau, 2014. Strategic management: principles and practice.)

The difference between intended, emergent and realised strategies can be understood with the help of an example. Honda entered the US market with the intended strategy to market motorcycles with 250cc and 305cc engines. But, the intended strategy failed because the US market preferred smaller models. Honda had a 50cc motorcycle which was a great success in the domestic market. So, Honda had to review its strategy and decided to change its strategy. So, the intended strategy was modified by emergent strategy and the realised (final) strategy was met with great success.

7. Participants in SMP

Strategic planning is a team effort and involves all levels and functional units of an organisation — top executives, middle managers and supervisors, and employees. Although strategic planning begins at the top, leaders should seek and reflect the input of managers, supervisors, and front-line employees.

Since strategies are formulated at corporate level, SBU level and functional level, therefore, managers from all these levels participate in strategic management process. In addition to the managers, the board of directors also play a definite role. At times, consultants also play an important role in framing the strategic process. Thus, there are five major participants in the strategic management process with varied roles. The five participants are –

A. Board of Directors
B. Chief Executive Officer (CEO)
C. Corporate Planning Staff
D. Other managers
E. Consultants

Role of Board of Directors

Professional boards can play very effective roles in strategic management process. They participate in setting and reviewing corporate objectives, formulation of long-term strategies, examination and review of proposals for new investment, appointment of chief executives and other key personnel, etc. These boards play a balancing role between strategy making process in the companies and the shareholders. Major strategic functions performed by these boards are –

a. Approval of corporate budget and resource allocation for strategic investments
b. Periodic review of the strategic planning process
c. Monitoring the chief executive's role in the strategic management process
d. To trigger discussion on growth possibilities and alternatives
e. Guiding the chief executive in formulating organisation-level strategies
f. Review of strategy implementation with respect to results or profitability

Role of Chief Executive

In the strategic management process of a company, the chief executive plays a crucial role. Main functions performed by chief executive are strategic as well as non-strategic. Some of the vital strategic functions of chief executives are –

a. Deciding organisational mission and objectives
b. Setting major policies, priorities etc.
c. Providing direction and leading the process in long-term planning
d. Directing short-term planning
e. Leading organisational resource development team
f. Allocating major resources to strategic functions and projects
g. Committing new projects and resources
h. Mobilising support to internal and external stakeholders
i. Managing relationship with the environment
j. Managing the board

Role of Corporate Planning Staff

As a result of the rising instability in the competitive environment, the strategic management process has also become more complex. Therefore, most of the large and multinational companies have a separate corporate planning department, which is equipped with specialised planning staffs that form the core of strategic planning activities of a company. This unit perform various functions mostly of strategic nature like –

a. Assisting the chief executive in developing and formalising fundamental concepts or visions about organisational growth and diversification.
b. Scanning the environment and identifying new business opportunities.

c. Analysing cost benefits of alternative investment opportunities and allocating resources to various projects and activities.
d. Integrating SBU plans into corporate plans.
e. Monitoring progress of strategic plans at corporate level, SBU level and functional levels.
f. Undertaking mid-term review of plans and strategies and, suggesting changes, if required.
g. Evaluating plan performance – measuring the degree of success or failure of strategic plans and reporting to the chief executive for necessary action.

Role of Senior Managers

The senior managers can be heads of SBUs as well as functional heads who play an important role in the whole process of strategic management.

The senior managers also participate in various functional and managerial committees including top management committees which are involved in strategic planning and management. As members of such committees, they may participate in critical decisions like making new investment, restructuring, diversification, etc. Corporate planning staff is also represented in all these committees.

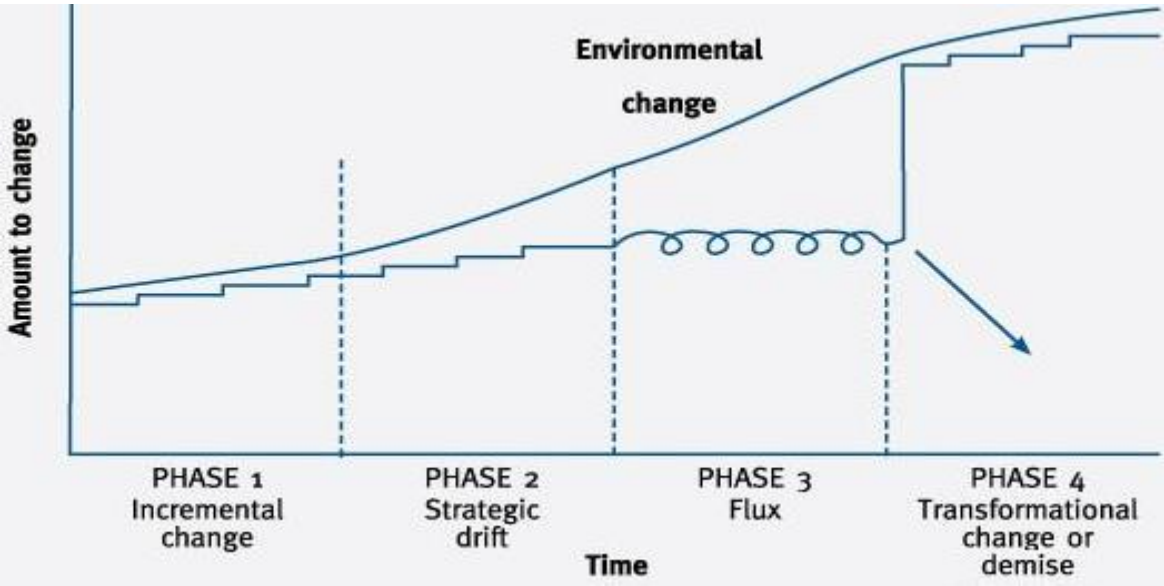
Role of Consultants

Management consultants also play an important role in the process of strategic planning of a company. Consultants provide their services in diverse functional areas of management including the strategic planning. The companies where no strategic planning divisions exist, consultants provide inputs for planning. Whenever the management feels the need for such consultancies, the consultants can take planning and strategy exercises. The leading strategic consultants use latest tools, techniques and models to define solutions to specific strategic management issues. Consultants offer diversified skills and experience from various companies which make them more effective in formulating strategic plans.

8. Strategic Drift

In the strategic management process of every company, there is a risk of 'strategic drift'. In other words, strategic drift is the widening gap between demand for change by environmental forces and actual strategic change in a company.

Strategic Drift



(Source: Johnson & Scholes, 2008. Exploring corporate strategy: Text and cases)

In simple term the failure to respond to company's external environment i.e. the competition, consumers wants and needs etc. Strategic drift occurs when a company, is not able to act according to the changing business environment or respond swiftly to the changes in the external environment and thereby keeps following the same strategy which has served it very well in the past. This shows that the company is not following its changing external environment and thus is obviously out of touch with external trends. In actual business situations also many companies have continued with their once successful business model even when it is clearly evident that the model is increasingly inappropriate in terms of future trends.

When there is a pressure for change, companies usually look for what is familiar. However, this creates problems when managing strategic change, because the action required may be outside the present

system and organisations may be required to significantly change significantly their core strategies. The situation may be one of declining performance and company may first seek to improve implementation of the existing strategy. And in case this is not effective, a change of strategy may be required.

Therefore, an organisation should strive to strike a balance while developing strategies. It has internal pressures (cultural or managerial) which tend to constrain strategy development, environmental forces, including market and competitors, which it must cope with for a particular strategic process to succeed. Every organisation has to constantly endeavour to align or realign these two forces to avoid the occurrence of a strategic drift.

9. Learning Organisations

Due to fear of strategic drift, every company should be learning organisation. The environment is too complex and changes too rapidly for strategic management to deliver desired results. Such uncertainty in the environment requires that strategy should be managed in a more unconventional, `discontinuous` way and not through incremental changes. Managers should not regard their experience as fixed and unalterable; in fact, they should try to develop an organisation in which they continually challenge past experience and practices and strive for new, innovative ways. In other words, they should develop learning organisation.

10. Summary

- Strategic management is the dynamic process of formulation, implementation, evaluation and control of strategies to realise the organisation’s strategic intent.
- The four stages of strategic management process are formulation, implementation, evaluation and control.
- Elements of strategic management process - establishing the hierarchy of strategic intent, formulation of strategies, implementation of strategies and performing strategic evaluation and control.

- Comprehensive Model of Strategic Management explaining strategic intent, strategy formulation, strategy implementation and strategic evaluation
- Wheelen and Hunger's Model of Strategic Management explaining environmental scanning, strategy formulation, implementation, evaluation and control, and feedback/ learning process.
- An organisation's intended strategy is changed during its implementation.
- A strategy is a mixture of a senior management's deliberate strategy, which is a planned strategy designed by senior managers for implementation at other organisational levels, and emergent strategy, which is strategy not foreseen by senior management that arises during the implementation of deliberate strategy.
- Intended strategy is the one originally planned: this can be emergent in its original, modified or an entirely different form because of developing situations.
- The realised strategy is what is actually implemented because of changed internal or external circumstances.
- Major strategic functions performed by boards of directors like approval of corporate budget and resource allocation for strategic investments, periodic review of the planning, monitoring the chief executive's role, trigger discussion on growth possibilities and alternatives, guiding the chief executive in formulating organisation-level strategies, review of strategy implementation.
- Strategic functions performed by chief executives are deciding organisational mission and objectives, setting major policies, priorities etc., providing direction and leading the process in long-term planning, directing short-term planning, leading organisational resource development team, allocating major resources to strategic functions and projects, committing new projects and resources, mobilising support to internal and external stakeholders, managing relationship with the environment etc.
- Specialised planning staffs perform various functions mostly of strategic nature like assisting the chief executive, Scanning the environment, identifying new business opportunities, analysing cost benefits, allocating resources to various projects, integrating SBU plans into corporate plans, monitoring progress of strategic plans at corporate level, SBU level and functional levels, evaluating plan performance etc.

- Role of senior managers relates to evaluation of proposals for new investment, restructuring, diversification, etc.
- Consultants also play very useful role, they use latest tools, techniques and models to define solutions to specific strategic management issues. which may relate to
- Strategic drift is the widening gap between demand for change by environmental forces and actual strategic change in a company.
- Strategic drift occurs when a company, is not able to act according to the changing business environment or respond swiftly to the changes in the external environment and thereby keeps following the same strategy which has served it very well in the past.
- Managers should try to develop an organisation in which they continually challenge past experience and practices and strive for new, innovative ways. In other words, they should develop learning organisation.

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