

## Activity 13. Formulate Contingency Plans

*“Spooked by war, terrorism and economic shocks, companies are adopting contingency planning techniques like never before”, Pierre Lavallee, Bain and Company*

### Introduction

What is contingency planning? This Activity is defined as: the formulation and detailed explanation and scheduling of actions to be taken in the event of a serious set of adverse and threatening circumstances or situations probably occurring in the future. A contingency plan includes backup procedures, emergency responses and post-disaster recovery programs, processes, activities and resource allocations. Such planning is related to crisis management, emergency preparedness and continuity planning. In the TSMP, contingency planning is closely linked to monitoring the environment, analyzing evolving situations and forecasting, especially the preparation of “threats scenarios.” Contingency planning is a logical progression of the planning thrust of the TSMP, i.e., from long range, strategic to medium and short term tactical planning. Contingency planning is the most immediate and detailed form of planning done by management.

Historically, such planning has been very rare. World War I and II were the two disastrous situations that necessitated contingency planning in many countries. In the 60 years that followed the last world conflict, contingency planning was done seldom and situationally; a classic example of *management by exception*. Oil companies had some form of emergency planning in the event of oil well fires. In many countries, emergency preparedness units have existed in their national government’s bureaucracy with links to the military, security and police forces. More recently, such “preparedness” has been activated to varying degrees, depending on the urgency of the situations being encountered. In the early 1970s, a special branch of the Privy Council Office was set up to manage federal-provincial relations, notably the FLQ crisis in Quebec. Colin Kenny, “What crisis management?”, *The Globe and Mail*, October 29, 2003, A.15. In the middle 1970s, the federal governments of Canada and the United States separately and cooperatively developed contingency plans for motor vehicle gasoline allocation and rationing. Through the 1980s and 1990s, an increasing number and variety of disasters occurred, ranging from poisonous gas leaks at the Union Carbide plant in Bhopal, India to the break up of the Exxon Valdez off the coast of Alaska, to murders at a McDonald’s restaurant south of San Diego, California. Not until the 1990s did contingency planning become a significant part of management, notably in large organizations such as governments and corporations, especially international companies.

The bombing of the World Trade Center on February 26, 1993, probably was the first major “wake up call” for corporations and the U.S. government. Terrorist activities in that country, such as the Waco siege and the Oklahoma City bombing, heightened the awareness and sense of urgency for contingency planning. With the approach of the Year 2000 (Y2K), the threat of problems with information systems, upon which huge networks of organizations relied, brought contingency planning to the forefront globally. (For a more detailed description of the Y2K scenario, please see the following vignette entitled, the “Preparing for the Y2K Glitch”). Clearly, the devastating attacks on the towers of the

World Trade Center during September 11, 2001, were clarion calls to plan for contingent action. Since that fatal day, terrorism has spread throughout the world. In addition, a range of other crisis situations have increased the need for such planning. Acute respiratory syndrome (SARS), West Nile virus, ecoli, "bird disease, AIDS/HIV and BSE or "mad cow disease" are just six serious health threats to significant numbers of people and organizations in North America and other nations of the "global village".

In 2003, a survey of 700 global companies by Bain and Company found that contingency planning was the ninth most widely used "management tool" among companies in North America and 11<sup>th</sup> among corporations world wide. Gordon Pitts, "Contingency planning techniques make big strides, Bain officials say", *The Globe and Mail*, October 13, 2003, B.11 Two years earlier, contingency planning, often thought of as scenario planning, was not on the list of the 25 most widely used management tools. According to the Canadian Managing Partner of Bain, "

... the trend toward contingency planning took off with the dot.com bubble and its spectacular collapse. It further accelerated with the Sept. 11 terrorist attacks and military actions in Afghanistan and Iraq. Lavallee, quoted in Pitts, *ibid*.

With the advent of the Iraq attack in March 2003, numerous companies in the Middle East had their contingency plans prepared and ready for use. Air Canada set up special teams and staffed their crisis rooms as preparation for the possible suspension of their local business and services, e.g., potential suspension of four weekly flights to Tel Aviv in Israel, in the event of a war in Iraq. Jacquie McNish and Patrick Brethour, "Firms draw up battle plans", *News from The Globe and Mail*, [www.globeinvestor.com/servlet/ArticleNews/story](http://www.globeinvestor.com/servlet/ArticleNews/story), 3/19/03, p.1. British Airways announced that it was suspending flights to Kuwait and Tel Aviv. Similarly, every major energy company operating in the Middle East had formal plans to evacuate. A warning by the federal government that travel was not safe in Iraq, Kuwait, Israel and Jordan was enough for information services company, SLMsoft Inc to recall its workers at its office in the United Arab Emirates. *Ibid* Clearly, the evidence is mounting that contingency planning is growing in importance with the management of organizations of all kinds, sizes and purposes, in many locations throughout the world and is a vital Activity in the TSMP.

As the 1990s evolved, nothing since World War II posed the threat of a disaster and was as formidable as the looming "Y2K Glitch" and its related viruses, hoaxes and threats supposed to be present in computer systems throughout the world. One senior government official, with responsibility for workers' compensation, stated that "... in the case of unanticipated (Y2K) problems, malfunctions, or events that could put workers at risk, employers need to make sure that they have a contingency plan in place." Steve Brown, "WCB recommends Y2K contingency plan to protect workers", *Canada News Wire*, [www.newswire.ca/release](http://www.newswire.ca/release), December 22, 1999. Mr. Brown went on to state that, "When the health and safety of workers is at stake, there is no such thing as too much planning. It is vital that each workplace have a back-up plan to cover unforeseen incidents." *Ibid*. The essence of the prospective problem was the computer programming practice of using two digits, especially 99 and 00, instead of the full four digits, e.g., 1999, 2000, in time-dated codes.

Estimates for the preparations and changes of software and systems exceeded US\$500 billion. In North America especially, governments, utilities, transportation and communication companies and financial institutions undertook major contingency planning initiatives to be prepared for various scenarios that managers, information systems, other staff and consultants considered probable before, during and after the start of the new millennium.

---

### **Vignette – Preparing for the Y2K Glitch**

Symantec Corporation's Year 2000 Awareness Center

#### Corporate Administration

“Your corporation must have effective policies and procedures in place to deal with potential Y2K-related virus, worm, trojan and hoax threats. Consider implementing the following list of recommended policies and procedures for the new year.”

How to prepare for Y2K viruses (in eight easy steps)

1. Keep virus definitions up to date
2. Use your Y2K auditing sessions to verify your definitions are up-to-date
3. Send out an emailing about safe software practices
4. Send out an emailing about Y2K hoaxes
5. Establish a Y2K threat escalation process
6. Update "all mailing lists" to forward all emails to the IT department
7. Identify points of entry into the corporation and restrict the introduction of new software
8. Establish your anti-virus emergency response team and contact list

Each of the eight steps identified above was elaborated in greater detail. For example, the penultimate point in the list above required that managers and staff Identify points of entry into the corporation and restrict the introduction of new software. The company's email went on to state that: If you are extremely worried about getting hit by a new Y2K-aware computer virus or worm, you may wish to configure your anti-virus or gateway software to strip all incoming attachments which may harbor questionable executable content. For instance, you could strip all executable files entering the corporation during the Y2K roll-over period.

The email covered each of the eight points listed above in further detail, thus enabling personnel to be ready for the prospective scenarios that included the threats of Y2K viruses and related contaminants.

---

#### Different ways of dealing with potential crisis situations

The importance and value of contingency planning in management is illustrated by contrasting the actions taken by four companies in crisis situations. Compare, for

example, the “stonewalling” reactions taken by Union Carbide (poisonous gas leaks in Bhopal, India) or Exxon, Inc (super tanker Exxon Valdez break up and oil leakage off the coast of Alaska) with the proactions taken by Johnson and Johnson (reported poisoning by users of Tylenol who took pills from packages which had been tampered with) or McDonald’s Restaurants (murders in one of its restaurants near San Diego). In the former two situations, management had no plans and reacted very defensively by down-playing the incidents, stonewalling and denying responsibility. Both incidents resulted in major court cases and widespread, negative public reaction. Only years later did Union Carbide undertake a "crisis turnaround". Denis Smith and Chris Sipika, "Back from the Brink: Post Crisis Management", *Long Range Planning*, Vol. 26, Issue 1, February, 1993, p. 28. Neither Union Carbide nor Exxon, Inc. had contingency plans prepared when the crises befell the corporations.

By contrast, when media reports indicated that some people in Chicago had been poisoned after using tablets from Tylenol bottles, Johnson and Johnson responded by implementing a contingency plan. The plan included national communication by the Chairman of the Board, removing all bottles of Tylenol from its channels of distribution, including retail stores, refunding or replacing previous purchases and launching a national promotion campaign. Two years later, Tylenol had recaptured its sales and market share. Similarly, McDonald’s took a proactive approach to the multiple murders in the south San Diego restaurant by communicating effectively with its publics, especially the victim's families, by closing the restaurant and, ultimately, removing the building and replacing it with a commemorative park.

### Needs for contingency planning

The Public Risk Management Association has told its members that thorough pre-disaster planning, coordinated with specific contingency plans, is the most effective way to manage a crisis. Christopher Dauer, "Planning Takes the Panic Out of a Disaster", *National Underwriter*, Vol. 97, Issue 21, May 24, 1993, p.2 As the numerous incidents above suggest, being prepared to act in competent ways on a timely basis during crisis situations is a growing responsibility of an increasing number of managers and personnel in a wide range of organizations. The need for contingency planning by some organizations is readily apparent, e.g., governmental agencies such as police, fire, medical and disaster assistance and non-governmental agencies such as the Red Cross and the United Nations.

Industries such as insurance, transportation and petroleum exploration, production and distribution, normally face above-average chances and risks of emergency situations. Thus, they have a greater need for contingency plans, programs, processes and activities to manage the crises they are likely to encounter. Given the prospects of power failures, computer crimes, major thefts or executive kidnapping, risk managers in insurance companies have been advised to develop contingency plans for such and other likely emergencies. Brian Cox, "Companies Must Protect Against Everyday Risk", *National Underwriter*, Vol. 97, Issue 42, October 18, 1993, p. 20. In the event of emergencies in its North Sea operations, Shell Exploration has a set of contingency plans and a team of personnel with appropriate training and skills to implement it. J.K. Dickson, "Contingency Planning for Emergencies", *Long Range Planning*, Vol. 25, Issue 4, August, 1992, p. 82. Similarly, the Southern California Gas Company has had a comprehensive response

system set up, the core of which is its Crisis Management Team. Richard M. Morrow, "Coping with Crisis", *Public Utilities Fortnightly*, Vol. 130, Issue 5, September, 1992, p.20. Since "9/11" the number and range of organizations with contingency plans and planning units has increased dramatically. No longer is such planning limited to a few companies, industry or governmental bodies.

Few other crises more effectively alerted management to the threat of disaster and illustrated the merits of contingency planning than the bomb explosion in the World Trade Center in central New York City on February 26, 1993. Using contingency plans developed after other recent emergencies, several companies in the Center, notably Dean Witter, Deloitte and Touche, Fiduciary Trust International and Kemper National Insurance, set up and used alternative computer systems, reassigned employees and continued on with their businesses. Michael Schachner and Douglas McLeod, "Contingency Plans get Workout", *Business Insurance*, Vol. 27, Issue 10, March, 1993, p. 70. Such situations illustrate and emphasize the growing need for and importance of contingency planning. For decades, the number and severity of catastrophes worldwide has been increasing. Jerry Hargrove, "Planning for the Worst", *Risk Management*, Vol. 40, Issue 10, October, 1993, p. 35.

Contingency planning has faced numerous obstacles and challenges. One survey of more than 500 consumer products companies, conducted by A. T. Kearney, revealed that while management was typically aware of the potential for emergency situations, 95 percent of the companies had only *informal* planning and *limited* policies for evaluating and reacting to potential product hazards. Helen Richardson, "Looking Ahead: Prepare for Crises", *Transportation and Distribution*, Vol. 33, Issue 6, June 1992, p. 36. An official of Penn Mutual Life Insurance claims that the biggest challenge for contingency planning in the insurance industry is to make such planning an integral part of the corporate culture. Kathleen Goldern, "Do as we Say, Not as we Do", *Insurance and Technology*, Vol. 19, Issue 2, February, 1994, p. 34. Another observer of management practices writes that the main obstacle to contingency planning is the widespread belief that disasters will not happen to them or their organizations. Jerry Hargrove, "Planning for the Worst", *Risk Management*, Vol. 40, Issue 10, October, 1993, p. 35. Sounds like the way some people think about drinking and driving --- ignorant.

Clearly, contingency planning is growing in progressive organizations. The reasons are obvious: an increasing range of disastrous threats and dramatically increasing risks and costs are compelling managers to prepare contingency plans. Whether the risks are natural disasters such as hurricanes or earthquakes, terrorist acts such as the World Trade Center bombing or the Air India plane crash near Lockerbie, Scotland or whatever the cause, there is a growing tendency of management to use contingency planning. A growing number of sources are providing information and advice about:

- \* **what emergency issues to expect** - Jonathon R. King, "Contingency Plans and Business Recovery: Details Overlooked in Contingency Planning", *Information Systems Management*, Vol. 10, Issue 4, Fall, 1993, pp. 56-59
- \* **what to do/not to do** - Michael J. Cerullo and Steven R. McDuffie, "Computer Contingency Plans and the Auditors: A Survey of Companies Affected by Hurricane Hugo", *Computers and Security*, Vol. 11, Issue 7, November, 1992, pp. 620-622; John Salak, "When Disaster Strikes", *International Business*, Vol. 6, Issue 11, November, 1993, pp. 47-48; Alan B. Harrison, "Be Prepared", *Occupational Health and Safety*, Vol. 62, Issue 11, November, 1993, pp. 40-43.
- \* **how to do it** (J. William Abel, "Blowout Risks Cut With Contingency Planning", *Oil and Gas Journal*, Vol. 91, Issue 23, June 7, 1993, pp. 30-36; Jill Andresky Fraser, "Disaster Planning", *Inc.*, Vol. 15, Issue 9, September, 1993, p. 40 ;
- \* **what a contingency plan contains** - Jerry Hargrove, "Planning for the Worst", *Risk Management*, Vol.

40, Issue 10, October, 1993, pp. 35-43; Joanne R. Piersall, "Contingency Planning: Facing Disasters and Surviving", *Nonprofit World*, Vol. 11, Issue 2, May-June, 1993, pp. 35-38; and

\* **approaches to contingency planning** - George H. Bodnar, "Security and Contingency Planning", *Internal Auditing*, Vol. 8, Issue 3, winter, 1993, pp. 24-27; Michelle Dalton, "Planning for Failure", *Global Trade and Transportation*, Vol. 113, Issue 7, July 1993, p. 23; Maris G. Martinsons, "Strategic Innovations: A Lifeboat for Planning in Turbulent Waters", *Management Decision*, Vol. 31, Issue 8, 1993, pp. 4-11.

For some organizations more than others, contingency planning is a necessary component of the TSMP. Risk managers, especially in large international corporations and government agencies having high risk and costs associated with their activities, are compelled to do contingency planning and integrate it into the overall process. Contingency planning must be developed in conjunction with other stages of the planning process, recognizing that the circumstances for contingency planning are exceptional, both in terms of cause and effects. Further, such plans must be reviewed on a timely basis to ensure that they can be implemented in 3E ways.

### Examples of contingency planning processes

#### A general process

This approach has been developed State of Kansas and is intended to outline the typical content of a complete contingency plan. <http://da.state.ks.us/disc/bcoutline.htm> The Kansas State contingency planning process is quite detailed. It is comprised of three stages, 14 phases and 37 activities. It has ten more activities than the entire TSMP. As with all aspects of the TSMP, this contingency planning process will vary according to the situations being encountered by an organization and its management. Not all of the stages, phases and activities will be applicable and/or used by an organization. The outline that follows has been amplified to make it more meaningful and useful.

#### Stage I. Initiation

- Phase A. Work group or team membership and objectives are identified
- Phase B. Roles and responsibilities for planning, plan approval and quality assurance are prepared, communicated and agreed upon
- Phase C. List of facilities, services, programs and activities are confirmed as vital and in an order of priority
- Phase D. Strategy, tactics and schedule for planning contingency actions are outlined
- Phase E. Contingency planning processes and protocols are developed, including ways and means for such essential Activities as:
  1. reporting progress with the contingency planning;
  2. reviewing the plans as they are developed;
  3. approving the plans at appropriate stages;
  4. resolving issues as they occur; and
  5. communicating, coordinating and working out any anticipate difficulties with relevant departments or organizational units expected to be involved in contingency actions.
- Phase F. Affirm support by executive, key members of management and staff.

Given the reality that contingency planning is commonly done under conditions of secrecy, it is made known selectively to members of the organization.

Phase G. Evaluate past or present disaster recovery or emergency preparedness plans. In the case of the contingency for motor vehicle gasoline rationing that follows as an example, planners started this evaluation with rationing programs used during World War II and by the United States Department of Energy. “Little sense in re-discovering the wheel.”

## Stage II. Organization Impact Analysis (of risks, costs and benefits)

Phase A. Determine the minimum acceptable levels of service, production and/or other forms of performance. This phase includes such Activities as:

1. listing or preparing matrices of vital, prioritized service, production or other dependencies;
2. listing or matrixing vital, prioritized service, production or other interfaces or relationships;
3. identifying and making commitments to other organizations, key units and/or individuals;
4. determining the minimum acceptable levels of service and/or output that could be tolerated under threatening, emergency or crisis circumstances;
5. listing or preparing matrices of facilities, equipment, personnel and other resources critical to support minimum levels of service, production and other essential performance(s).
6. obtaining executive approval for minimum acceptable levels of service, production and other essential performance(s).

Phase B. Prepare failure scenarios based on potential threats, risks and logical consequences, notably damaging conditions, entailing the following Activities:

1. envisioning the “window of vulnerability” or the period of time during which the service, production and other performance(s) would likely be at risk;
2. assessing the internal schedule of remediation efforts and the likelihood of them being completed on time;
3. evaluating the confidence in, reliance on and the condition of external services, suppliers, other “supporters” and dependencies
4. evaluating the potential failure scenarios with the likelihood of their occurrence.

Phase C. Impact of each failure scenario on vital organizational services, production and other forms of performance with the likelihood of their occurrence

1. list or matrix the scale of impacts of each scenario on each vital component of the organization with the probability of their occurrence.

Phase D. Services, production, other performances and resource allocations for which contingency plans will be developed. The Activities include:

1. listing the services, production and other performances and the scope of contingency programs, processes, activities and resource allocations required; and
2. obtaining executive and other approvals of contingency scope.

### Stage III. Contingency Planning

Phase A. Relevant contingency efforts of local, regional and/or national partners, based on such Activities as:

1. identifying relevant bodies with the history, complementarity and the potential to plan with both synergistically and symbiotically;
2. communicating efficiently and effectively with such prospective partners; and
3. making arrangements to proceed with contingency planning efforts on the basis of sensitivity to time, resources, priorities, commitments and other vital factors

Phase B. Contingency strategies, tactics, programs, processes, activities and resource allocations established on the basis of aims, priorities and timing, which include such Activities as:

1. listing the services, production and other performance components considered to be contingencies, what is required to support them and the benefits to be derived from contingent actions;
2. considering the contingency actions and the resources required;
3. assessing the contingencies considered in terms of:
  - a. how well the contingency action will likely mitigate the risks and negative impacts of disruptions in service, production and other forms of performance;
  - b. the assessment of time and resources required to acquire, test and implement the contingency plan(s); and
  - c. the sustainability of contingency programs, processes, activities and resource allocations within organizational constraints.
4. obtaining executive and other necessary approvals for contingency strategies, tactics and resource allocations

*Phase C. Detailed contingency plans are prepared for each contingency situation, including the following Activities:*

1. formulating the scope, priorities, objectives and goals of the contingent situations;
2. identifying the contingency triggers and what results from triggering;
3. scheduling the preparation and deployment of contingent actions;
4. monitoring conditions to ensure the accurate identification of triggering events;
5. specifying the roles and responsibilities for preparing and deploying priority contingency programs, processes, activities and resource allocations, including updated contacts and contact mechanisms
6. developing and testing status reporting processes and protocols, rules and other official documents;

7. prepare and test instructions to carry out contingency programs, processes, activities and resource allocations;
8. arrange the coordination networks with local, regional and/or national organizations or units;
9. estimating and budgeting for the costs and required resources;
10. arranging agreements and schedules with suppliers on whom each contingency is dependent;
11. prepare a communications plans, processes, activities and resource requirements;
12. develop a business or operations resumption plan, including:
  - a. criteria for resuming business or organizational operations;
  - b. priorities, processes and resources for resumption;
  - c. specifications of roles, responsibilities, actions, timing and processes and activities.
13. test and validate the short, medium and long term plans for contingent situations and resumption of organizational services and operations
  - a. which components will be tested?
  - b. who will involved in the testing?
  - c. when will the testing be done?
  - d. what will be the test measures?
14. establishing the testing and validating plans based on:
  - a. objectives and goals;
  - b. approach(es);
  - c. facilities, equipment and other physical resources required;
  - d. qualified personnel;
  - e. timely, critical path schedules and locations;
  - f. specified procedures;
  - g. expected results; and
  - h. acceptance criteria.
15. testing and validating results of contingency capabilities and resumption of organizational operations, including:
  - a. the adequacy of support for vital services and operations;
  - b. capacities to manage, record and track contingency activities and resource allocations;
  - c. the sufficiency of resource availability to implement and sustain contingency programs, processes and activities; and
  - d. the adequacy of organizational resumption activities.

This outline illustrates the nature and scope of contingency planning processes and is not intended to provide a complete approach. However, this outline provides a basic framework that could be used in whole or in part and developed into a planned approach to managing contingency situations that might occur in most organizations. It provides an answer to the common question posed by managers: How do we do it?, i.e., contingency planning.

## Process for motor vehicle gasoline rationing

In 1974-5, an international energy crisis evolved out of political and economic unrest in the Middle East. Faced with growing hostility, cutbacks in supply, major increases in prices and the threat of embargos, governments in Canada, the United States and other industrial countries undertook emergency efforts to develop contingency plans. The process was used to prepare a contingency plan for motor vehicle gasoline rationing which, to date, has not been used. Once again, the TSMP provides the basic framework for this planning.

**Activity One: Determine the purpose.** The contingency planning for motor vehicle gasoline rationing was undertaken for one fundamental reason: to minimize any adverse social, economic and political consequences that might result from a gasoline supply shortage in Canada. Such threatening consequences had resulted from the information and intelligence gleaned from monitoring the supply of and demand for oil, the conflict between several producing countries and the large, international oil refiners and distributors, notably Exxon and the other “seven sisters”.

**Activity Two: Monitor the environment.** The decision to prepare contingency plans for gas rationing by the Prime Minister and the Government of Canada resulted from information and intelligence about changes in crude oil supply by members of the Organization of Petroleum Exporting Countries (OPEC). Much of the information and intelligence was conveyed by the mass media, especially television and daily newspapers. In addition, military, foreign affairs and other surveillance and information-gathering bodies of industrial governments, notably the United States, Canada, Japan, Germany and Great Britain, were finding increasing indications of serious actual and potential crude oil shortages.

**Activity Three: Situational assessment.** Basically, the situation focussed on the threat of an oil shortage resulting from actions taken by the Organization of Petroleum Exporting Countries (OPEC) in 1973 and 1974. Those actions included cutbacks in crude oil supply, notably to Japan, Israel, The Netherlands and United States military bases, quadrupling of prices for crude oil and alarming rhetoric, including threats of more severe actions, by OPEC members. The threat to Canada was compounded by bilateral energy-sharing, notably, crude oil supply, agreements with the United States.

Like other developed countries, Canada was highly dependent on crude oil supplies for its industrial, agricultural, trade and consumer economic activity and its social and political stability. Each of those factors included a multiplicity of elements. For example, industry relies on numerous products made from crude oil. Virtually every company relies on petroleum products to heat buildings, to fuel production, distribution, sales and transportation. Consumers rely on their vehicles for shopping which accounted for roughly 65 percent of Canada's Gross National Product. At that time, nearly 50 percent of motor vehicle gasoline consumption was for shopping and related consumer activities. OPEC's publicity about the supply cutbacks and price increases heightened the sensitivity and public concerns about prospective adverse consequences.

The analyses of these factors and their potential impacts on the economy, society and government of Canada provided more than ample bases for the decision to prepare a contingency plan for gasoline rationing in Canada. In addition, the United States government, under the auspices of the Department of Energy, had launched its contingency plan for gas rationing. If the government had been short of time and facing an emergency, it could have gone directly to preparing and implementing the contingency plans (as illustrated in the TSMP model) rather than take the more deliberate and detailed approach that it chose to take.

Activity Four: Prepare policies. While consultants and government officials were involved in the previous three activities, others were developing policies that would direct and guide the gas rationing program, its preparation and implementation. The government prepared an extensive set of guidelines and supporting legislation for the planning and implementation of gasoline rationing across the nation and in its relations with foreign countries, notably the United States.

In part, the policies dealt with matters related to conservation and allocation of energy sources, regions of the country, seasons of the year and allocations of supply by levels of user priorities. The top priority category included government leaders, police, military, hospitals, medical care facilities and vehicles. The second category was predominantly industrial and agricultural users. The third category of user was the consumer group which had the most discretion about whether or not it used motor vehicle gasoline. A fourth, miscellaneous category was included to provide for priorities previously not determined or special sets of circumstances not normally considered.

Activity Five: Forecast futures. The contingency rationing plan was prepared for three scenarios, each one based on decreasing levels of crude oil supply. The three crude oil supply scenarios were: the 90 percent, 85 percent and 75 percent of the average number of barrels per month for the past five years. Each scenario had a component of the overall contingency plan.

Activity Six: Setting objectives. The basic objective was consistent with the purpose and that was to minimize the adverse consequences of significant cutbacks in crude oil supply to Canada and the United States. Other objectives were consistent with the policies prepared in the previous activity, e.g., to allocate energy supplies equitably across the nation, to safeguard the populous in regard to its safety and security, its medical and vital governmental services, to maintain, as much as possible, the economic activity of industry, trade and agriculture. Objectives were also set for the level of crude oil and derivatives consumption by categories of user.

Activity Seven: Setting goals. This activity was the most difficult to plan because of its extreme complexity. Goals were set primarily for target levels of consumption given assumed levels of supply. Each goal was set to allow some "slack" for miscalculations, unforeseen demand or flexibility in managing critical, time-sensitive,

unique programs that had never been performed before, including the rationing programs of the world wars.

Activity Eight. Formulate the contingency plans. A small team of internal management consultants within the Government of Canada were contracted to develop the contingency plans within a three month period. They started by outlining what they knew about such planning. Since none of them had any experience with such scenario based planning (in the mid-1970s), they knew very little. They did agree that it had to be systems-based. To keep from “rediscovering the wheel”, the consultants launched several simultaneous search efforts: one was to find what was relevant from World War II and other rationing programs, particularly for gasoline; the second was to identify a systems approach that would provide a framework for an operative plan; a third was to gather relevant research on patterns of gasoline consumption, especially statistics on levels of consumption by sectors of the economy. Other search efforts were undertaken.

The results of the search activities resulted in the adaptation of an industrial systems model Jay Forrester, *Industrial Dynamics*, Boston: M.I.T. Press, Inc., 1964. The system had five stages:

1. supply and demand monitoring – The Government of Canada, through the Department of Energy, Mines and Resources and its Energy Supply Allocations Board and in conjunction with the petroleum industry would monitor the flows and sales of motor vehicle gasoline in Canada as well as the global supply and demand, especially in economically developed countries such as the United States, Britain, Germany, France and Japan.

2. coupon printing – The coupons used in World War II provided little useful information or intelligence about the physical production of coupons. A series of meetings in Washington with officials at the Department of Energy and two major consulting firms provided valuable information and intelligence about what to do and not to do when printing coupons. Based on the printing experience and expertise of the lead consultant and personnel at the two bank note companies located in Ottawa, the design of the coupons was undertaken. Based on the entitlements of the three categories of user, the specifications, quantities and schedules of the coupons to be printed were determined.

3. coupon distribution. For several sound reasons, the postal system was chosen to distribute the coupons. It was the only organization that provided service everywhere in the world’s second largest country. The Post Office was a department of the federal government which facilitated a high level of cooperation and performance. It was a secure service with a high level of delivery reliability. The coupons would be delivered according to entitlements on a staggered schedule.

4. coupon redemption. In cooperation with the petroleum companies, their distributors and the banking industry, the consultants through the federal government were able to design the coupon redemption sub-system. In effect, vehicle operators would use their coupons when they purchased their gasoline. In turn, the service stations would be required to provide the coupons to their suppliers when they purchased their gasoline.

Then the coupons would be deposited with the banks which in turn would return them to the Department of National Revenue.

5. auditing the coupons and the rationing system. Within the Department of National Revenue, the coupons returned would be reconciled with those distributed as well as to monitor the use of the coupons. The use of the coupons would provide valuable, timely data about the demand for motor vehicle gasoline and used in monitoring the aggregate levels of gasoline in Canada.

Historically, contingency planning is an activity with which management has little interest or experience. With the exception of war times, such planning has not been needed. In more recent times, especially with the severity of natural disasters, larger, more complex activities and acts of terrorism around the world, the need for contingency planning has become integral to many organizations in the private, public and charitable sectors. Judging by the growth in such threatening situations, the need and use of contingency planning will continue in well-managed, proactive organizations.