CHAPTER 2

LITERATURE REVIEW

The literature review in this study covers the following topics:

1. Drug addiction,
2. Strategic Management,
3. Balance Scorecard, and,
4. Related Research

2.1 Drug Addiction

"Narcotics" means any form of chemicals or substances which upon being consumed whether by taking orally, inhaling, smoking, injecting or by whatever means, causes physiological or mental effects in a significant manner. These effects include strong physical and mental need of dosage, need of continual increase of dosage, having withdrawal symptoms when deprived of the narcotics, and the health in general being deteriorated. Narcotics also includes plants or parts of plants that are or give products as narcotics, or may be used to produce narcotics, and chemicals used for the production of such narcotics as spelled out in the Government Gazette. However, certain household medicines that are recognized by the country's pharmaceutical laws are not defined as narcotics.

In order to be controlled properly, narcotics are classified into five categories according to their level of danger to health and medicinal purposes. The following table shows their categorization according to Notifications of the Ministry of Public Health No.135 (1996) and No.150 (1999):

Category I	Dangerous narcotics such as heroin, amphetamine, methamphetamine, ecstasy and LSD.
Category II	Ordinary narcotics such as coca leaf, cocaine, codeine, concentrate of poppy straw, methadone, morphine, medicinal opium and opium.
Category III	Narcotics that are in the form of medicinal formula and contain narcotics of Category II as ingredients.

Category IV	Chemicals used for producing narcotics under Category I or II such as acetic anhydride, acetyl chloride, ethylidin diacetate, chlorpseudoephedrine, ergometrine, ergotamine, isosafrole, lysergic acid, piperonal and safrole.
Category V	Narcotics which are not included in categories I to IV, such as cannabis, *kratom* plant, poppy plant and magic mushroom.

Addiction

An interesting note that shows the addictive power of the drug is the fact that cocaine and strong amphetamines are two drugs. If given the opportunity, they will focus all of their time and energy on doing these drugs, not eating, drinking, or having sex. And they will be very happy and content doing so, and will not pose any threat to other members of their group.

All addictive drugs have two things in common: they produce an initial pleasurable effect, and this pleasurable effect is followed by a rebound unpleasant effect.

The drug amphetamine, through its stimulant effects, produces a positive feeling but when it wears off it leaves a person with the opposite feeling. This is because the drug suppresses the body's normal production of adrenaline that over time causes a chemical imbalance. This in turn leads to irritability and a craving for more drugs and the good feeling they create. This pleasure-tension cycle that repeats itself over and over again causes the body and mind to loose control to amphetamine. This mental and physical condition is known as addiction.

The World Health Organization (WHO) (1957) defined drug addiction as a state of periodic or chronic intoxication produced by the repeated consumption of a drug. Its characteristics include:

1. An overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means;

2. A tendency to increase the dose;

3. A psychic (psychological) and generally a physical dependence on the effects of the drug; and,
4. An effect detrimental to the individual and to the society.

The Royal Institute (1982) defined drugs and harmful drugs as:

1. Drugs are any substance or medicine when used continuously will cause poison to the mental and physical health such as opium, cannabis, heroine, barbiturates and alcohol; and,

2. Harmful drugs are chemical substances or any material in whatever way the body takes, such as eating, inhaling, smoking, injecting, and causes poison to mental and physical health like the need for more drugs, having craving symptoms while in detoxification, etc.

Amphetamines

A History of Amphetamines

The Chinese first described the properties of the stimulant ephedrine over 5000 years ago. First synthesized in 1887 in Germany, amphetamine was for a long time a drug in search of a disease. Nothing was done with the drug from its discovery (synthesis) until the late 1920s, when it was seriously investigated as a cure or treatment for nearly everything from depression to decongestion.

Amphetamine, a synthetic analog of ephedrine, was introduced in 1932 as an appetite suppressant, and reports of its abuse appeared shortly there after. In 1935 physicians successfully used it to treat narcolepsy. In 1937 amphetamine was found to have a positive effect on some children with Attention Deficit Hyperactivity Disorder (ADHD). When given amphetamine, some people with ADHD - a difficulty concentrating - notably improved their concentration and performance. Instead of making ADHD sufferers more jumpy, as might be expected, amphetamine calmed them down. In the United States, widespread abuse occurred in the 1960s and early 1970s. Although some physicians in the 1970s actually prescribed amphetamines to increase alertness and productivity, their abuse potential has subsequently limited therapeutic use to the treatment of attention deficit – hyperactivity disorder (ADHD) and narcolepsy.

Amphetamines are divided into Three Basic Groups:

1. Methamphetamine or Methylamphetamine, trade name Methedrine or Methadine. It is the most potent example of the group of central nervous system stimulants known as amphetamines. It is about twice as strong as the amphetamines in Group 2.

2. Dexamphetamine or Dextroamphetamine, trade name Dexedrine. These are in turn about twice as strong as the amphetamines in the third and last group:

3. Amphetamine or D'lamphetamine, trade name Benzedrine. This is the weakest member of the group.

Amphetamines have chemical properties and actions so similar that even seasoned users have difficulty knowing which drug they have taken. Their chemical structure is close in resemblance to adrenaline and noradrenaline that are the body's own natural stimulants. The drug's euphoric effects are similar to but longer lasting than those of cocaine.

Street names include "speed," "bennies," "meth," "crank," "crystal," and "ice." Amphetamines can be taken orally, inhaled through the nose, or may be injected intravenously. Ice is smoked, although it can be injected.

The Applications of Amphetamine

1. Oral. This is the original method until now;

2. Intravenous injection. Amphetamine may be mixed with the other drugs such as heroine or tranquilizers. This is called "Speed Ball;"

3. Smoking. Amphetamine is blended with the tobacco in cigarettes; and,

4. Inhalation. Amphetamine is grinded into powder, then heated. Its vapor inhaled using:
   a. A pipe. Irritation from the amphetamine vapor is reduced as it passes through the water;

b. A container such as aluminum foil or pan. This technique is known as "catching the dragon." It draws its name from the design of the vapor released by heating an amphetamine "boat" on the container. A tube made from rolling paper is then used to inhale the vapor. This technique is said to be most popular among student abusers in the present.

The Pharmacology of Amphetamines

Amphetamine, a racemic phenylisopropylamine is a synthetic congener of ephedrine. Methamphetamine, a chemically-related compound is synthesized either by the reduction of ephedrine or by the condensation of phenylacetone and methylamine.

Amphetamines are completely absorbed by the gastrointestinal (GI) tract and distributed throughout the body and the brain. Intravenous administration allows amphetamines to reach the brain within seconds; inhaled vapors first condense in the lungs and are then rapidly absorbed into the bloodstream.

The liver metabolizes amphetamines to active ephedrine derivatives and inactive forms. The actions of both amphetamine and methamphetamine are the same and the half-lives of amphetamine and methamphetamine are eight and 12 hours, respectively. Repeated dosing of amphetamines over several days, called "speed runs" keeps the serum concentration of the drug and its active metabolites elevated and prolongs effects. The metabolites are ultimately excreted in the urine, and may be detected by toxicology screens.

Mechanism of Action

Amphetamines, indirect monoamine agonists, produce action both centrally and peripherally by causing norepinephrine, serotonin, and dopamine release from presynaptic terminals. These effects result from interactions of the drug with both the transporter involved in neurotransmitter re-uptake and the vesicular storage system, and from inhibition of the monoamine oxidase (MAO) system in the presynaptic nerve terminal.

Although amphetamines block the catecholamine re-uptake mechanism, the drug can be transported into the nerve terminal. Once inside the cells, they inhibit both the vesicular storage of dopamine and its breakdown by MAO. These two actions result in a buildup of catecholamines in the synaptic cleft and increased activation of the postsynaptic receptor. The use of amphetamine increases the amount of available dopamine in the brain, which leads to mood elevation (e.g. feelings of elation or euphoria) and increased motor activity.

Natural activities such as eating, drinking, and sex activate the nucleus cucumbers, inducing considerable communication among this structure's neurons. This internal communication leads to the release of dopamine that produces immediate but ephemeral feelings of pleasure and elation. As dopamine is again released more feelings of pleasure and euphoria are produced. The release of dopamine and the resulting pleasurable feelings positively reinforce such activities in both humans and animals and motivate the repetition of these activities. Dopamine is believed to play an important role in the reinforcement of and motivation for repetitive actions and there is an increasing amount of scientific evidence suggesting that the limbic reward system and levels of free dopamine provide the common link in the abuse and addiction of all substances. Dopamine has even been labeled "the master molecule of addiction".

Actions of Amphetamine

Amphetamine will make vascular constriction, tremors, and palpitation. It will also stimulate the central nervous system by secreting adrenaline and dopamine in higher levels than normal creating certain psychotic symptoms. The effects on peripheral nervous system are arrhythmia, high blood pressure, tachypnea, chest discomfort, headache and etc. (Elliott, 1974)

Amphetamines are powerful central nervous system (CNS) stimulants with peripheral and (three adrenergic actions similar to those of the indirectly acting sympathomimetic drugs). In the CNS, amphetamines stimulate the cerebral cortex, striatum, limbic system, and brainstem. With 10-30-mg doses of dextroamphetamine (the more potent isomer), this stimulation results in increased alertness and wakefulness, decreased fatigue, elevation of mood with increased initiative and self-confidence, a heightened ability to concentrate, decreased appetite, and insomnia. Increased release of norepinephrine and dopamine caused by the drug

appears to mediate these effects. Higher doses can cause convulsions, stereotypic movements, or a psychosis mediated by the release of dopamine and possibly serotonin in the limbic system and cortex. Depression and fatigue almost always follow these behavioral changes when the drug is removed.

Dependence often occurs with chronic use of amphetamine. Regular users usually develop tolerance to the euphoric and anorectic effects of amphetamine within a few weeks. Some dependent individuals take 1700 mg per day without apparent ill effects. For unclear reasons, not all individuals develop tolerance to amphetamines. Some narcoleptics have been treated for years without increases in their initial effective dose.

Peripherally, amphetamine actions are mediated by the release of norepinephrine. They increase the systolic and diastolic blood pressure significantly by stimulating a-receptors in the vasculature and (3-receptors in the heart). With the increased blood pressure, there is often a compensatory decrease in the heart rate. Cardiac arrhythmia can occur with a large amphetamine dose. In contrast to caffeine, amphetamines have little effect on cerebral blood flow.

The most common CNS effects of amphetamines include restlessness, dizziness, tremor, irritability, insomnia, weakness and hyperactive reflexes. Delirium, confusion, aggression, panic states, and paranoia can occur even in individuals with no history of mental illness. There is a great amount of anecdotal evidence on the relationship of stimulant use and various sexual behaviors. Stimulants may be used during sexual activities to intensify sexual acts, heighten pleasure, lengthen the duration of intercourse and lessen inhibitions. The abuse of stimulants is also known to lead to uncharacteristically aberrant or deviant sexual behaviors, such as buying the service of a commercial sex worker and doing HIV high-risk behaviors.

Chronic use can produce a state called "amphetamine psychosis" that resembles acute mania. In this state, individuals experience vivid hallucinations and paranoid delusions, followed by fatigue and depression. Chronic use may also result in nausea, vomiting, diarrhea, or weight loss. If the patient injects the stimulants, the risk of narcotizing angiitis or an intracerebral hemorrhage increases.

General effects of amphetamine use include headache, chills, pallor or flushing, excessive sweating and urticaria. Palpitations, cardiac arrhythmias, angina pain, hypertension or hypotension, and eventual circulatory collapse comprise specific cardiovascular effects. The GI system effects include anorexia, nausea, vomiting, abdominal cramps, diarrhea and a metallic taste in the mouth. In fatal doses, amphetamines cause convulsions and coma, usually due to cerebral hemorrhage.

In children, stimulants, including the amphetamines, are thought to suppress growth especially in those who receive them for long-term treatment of ADHD. Thus, periodic "drug holidays" are usually employed. Use of amphetamines is contraindicated in patients with known coronary artery disease, glaucoma, hyperthyroidism and for patients concurrently being treated with MAO inhibitors.

Effects

Even small amounts of drugs in the amphetamine family can produce euphoria, enhanced wakefulness, increased physical activity, decreased appetite, increased respiration, and can include feelings of power, strength, self-assertion and enhanced motivation. On average, taking moderate doses, the effects of amphetamines will last about four to twelve hours.

Side Effects

Side effects can include athetosis (writhing, jerky, or flailing movements), irritability, insomnia, confusion, tremors, anxiety, irregular heartbeat, chest pain, fever, difficulty in breathing, dizziness, irritability, nervousness, insomnia, nausea, hot flashes, dryness of the mouth, sweating, palpitations, and hypertension. Excessive dose can produce mental confusion, severe anxiety, paranoia, and hyperthermia, and convulsions.

In addition, amphetamines cause increased heart rate and blood pressure that can lead to irreversible damage to blood vessels in the brain, producing strokes.

Amphetamine use during pregnancy may result in prenatal complications, increased rates of premature delivery, and altered neonatal behavioral patterns.

Drug Dependency Treatment

Drug dependency treatment is covered by the 1979 Legislation on Harmful Drugs and by Notification of the Ministry of Public Health No.6 (1980). Treatment is specified as followed:

1. Pre-admission
2. Detoxification
3. Rehabilitation at Therapeutic Community Centers
4. After-care

Levine (1973) defines drug dependency treatment as a return to the actual status to live a normal life and to be a source beneficial to the society. Therefore, going back to the normal status, patients will have to consider how to follow each step of the treatment and how to remain in treatment in order to achieve better mental, physical and social health.

Treatment of Substance Abuse

There are many approaches to the treatment of substance abuse in individuals with addictive disorders. Each approach has a philosophical difference however some overlap in perspective. And no one philosophy fully or adequately explains the range of addiction problems. No one philosophy suggests the prefect treatment approach.

At present intervention approaches use several tactics to prevent relapse based on the causes of addiction and relapse. These causes usually are physical, mental and social. However the proper intervention will be selected based on the most crucial factor that leads to relapse.

This study has reviewed existing literature in the field by focusing on specific intervention approaches to substance abuse including the following:

1) Pharmacotherapy

Substitution therapy is the therapy in which the patients are given medicine or chemical substances that produce similar effects to drugs. However, the amount of substances given remains the same. Today, Methadone is given to heroin users. However, this therapy alone is not effective enough as it actually fulfills and reduces the craving but it does

not satisfy the user as much as the drugs themselves do. Moreover, as all the problems causing addiction are not eliminated, patients therefore relapse. This particular therapy is now used in combination with other therapies. However, no Methamphetamine substitute is given to Methamphetamine users. At present, researchers are studying the use of bromocriptine amantedine that is dopamine agonist. This substance produces strong side effects such as queasiness, headaches, vertigo and nerve problems. Currently there is not yet an effective pharmacotherapy for methamphetamine use disorders (Rawson, 1999).

2) Behavior Treatment

There are several types of behavior treatment. The treatment depends on the main reason for relapse. Depending on individuals, the reason could be purely personal, a lack of problem solving and weak or no motivation. Environmental factors include high pressure from society, pro-drugs society or lack of social support that encourages the use of drugs.

Behavior Treatment includes the following:

2.1) *Group Psychotherapy and Group Counseling.* Group Psychotherapy includes supportive therapy, patient center therapy, cognitive therapy, behavior therapy and cognitive behavior therapy. Each therapy may require different techniques but they all share a common principle – to help the patients understand themselves and be aware of their problems. In addition, counselors should know how to make the best use of a patient's potential and their supportive surrounding as well as to promote self-dependency and responsibility. According to studies on Group Counseling Therapy, Cognitive Behavior Therapy is more and more the practice as it assists the patients in two respects: (1) it encourages the patients to think for themselves and (2) it helps them build skills for a normal productive life. In the first respect, patients are guided to adjust their thinking to be able to consider all relevant factors to make reasonable choices without becoming agitated. In the latter respect, patients are coached to practice a set of skills that can be needed in real life. This aspect differs from other counseling approaches. Counselors mostly emphasize particular aspects only (Criys-Christoph & Stquelans, 1996). Studies demonstrate that counseling therapy is based on the Cognitive Behavior Therapy (Marlatt & Gardon, 1985) that uses the Problem Solving Theory (Goldfried & Davinson, 1978) and that has shown to be more effective with drug abusers than other therapies

(Chancy, et al., 1975; Marlatt & Gordon, 1984, cited by Bergin & Garfied, 1994; Carroll, et al., 1994). In Thailand, research has mostly focused on comparing only the rehabilitation period of various therapies, including supportive therapy, patient center therapy, and reality therapy.

Studies found better results in patients who joined the counseling group than those who joined the control group. The groups given counseling had a higher abstinence rate, more self-esteem and a lower level of sadness. The evaluation normally occurred four weeks after intervention (Klangkla, P. 1989; Nilakarn, T. 1989, Inthasawaek, J.1997). It is suggested for future research to prolong the time used to follow the results. The length of time recommended is at least 24 weeks (Bandura, 1997, Rawwson, 1999).

2.2) *Therapeutic Community* considers the environment and culture as the main influence on behavioral change. A supportive society enables people to be responsible and to face problems. Therefore, the treatment is organized in a home-like atmosphere where the patients practice a new way of life. This therapy however requires regular checks to see if patients, supported by their peers in their own community, do abstain from drugs. These checks are carried out by community staff, some of whom were themselves once drug abusers. A therapeutic community conducts many activities aimed to promote self-responsibility skills, self-dependency, being role models to one another and exchange of information. All these activities are aimed to fully rehabilitate the patients: physically, mentally and socially; and to prepare them for a new life. Studies confirm that this therapy appears to be the most effective (Walsh, et al, 1991). Nevertheless, this kind of therapy has a very high drop out rate and is the most costly as the patients must remain in the therapeutic community for at least six months to two years. In the US, the government has the policy to use this therapy only after others have failed due to various limitations. In Thailand, there is no such policy but the country has a limited budget and is facing a number of difficulties in organizing the effective therapeutic communities. Therefore, this therapy is probably suggested for those who cannot be treated with other therapies or treated as outpatients.

2.3) *Self-help group.* One example of self-help groups is Alcoholic Anonymous (A.A). This therapy is a grouping of volunteers who were once addicts but have maintained stable abstinence. They will share their experiences in addiction and how they succeeded to quit.

Group members also counsel one another and organize social activities such as tea parties and events for special occasions that are free of drugs. The advantage of this therapy is that the members trust, accept and encourage each other. Being guided by experienced drug abusers, patients are motivated to abstain. Still the drop out rate is always high. Like in the Therapeutic Community group, 50% dropped out by the first three months (Miller and McCrady, 1993 cited by Edwards & Dare, 1996.) and relapsed as they rejected the reasons they themselves have identified and accepted during therapy, for not using drugs. The main reason is the lack of motivation and for some patients the group did not seem to be beneficial to them (Miller et al., 1995 cited by Bandura, 1997). In Thailand, self-help groups are held only among alcoholics.

2.4) *Family Therapy* is basically practiced at the same time as individual therapy in order to involve each member of the family and to encourage the patient's adjustment. Family members will learn how to deal appropriately with their children or siblings who are addicted by giving them an opportunity to express ideas, to be responsible for their lives and to set self discipline. This helps promote self-regulation and strengthen determination to live a normal life as well as to abstain from drugs. In addition patients also need clear and precise communication that shows love and care from their family. As a result, patients will find themselves worthy and significant thus encouraging abstinence. Studies reveal that family therapy is one essential factor that prevents relapse (Lewis, et al, 1990; Todd, Selekman, 1991). Unfortunately, it seems to be difficult to practice family therapy since family members often cannot join the therapy due to financial/professional reasons, and in some cases, a lack of understanding of the benefit of the therapy. This approach was adjusted to family involvement rather than therapy by assigning a certain family member or a certain person who is important to the patients to join the group. This person is assigned to explain and relate the treatment approach to other members. Research shows no significant differences between these two therapies (Szapocnik et al., 1986). In Thailand, family involvement has been practiced though counseling with a nurse and social workers once a month for one year at Thanyarak Hospital. However, there is no formal evaluation of this approach to date.

3) **Multimodality Invention Approach**

Since the above therapies focusing on specific factors do not give satisfactory results (only 30-40% can abstain from drugs), therapy today emphasizes the personal and environmental aspects of the patients.

Multimodality Invention Approach is practiced in the belief that relapse is caused by personal and environmental factors. This approach includes detoxification, substitute drug, Counseling, Peer Group Support, Family Involvement and Group Activity. These can be used for both in and outpatients. After the detoxification period that reduces withdrawal symptoms, patients will be treated in groups or by individual counseling along with other group activities such as group meetings (in the form of self-help groups), recreation and work therapy. In addition, they also receive Family Involvement Therapy either in the form of Group Counseling, Psycho-education groups or Self-Help Groups. Patients will be encouraged to participate in their community's self-help groups. They are also advised by several centers, which help them to adjust and develop themselves. Those places are academic service centers, career practice centers, job recruiting agencies and hot lines. (Sullivan, 1995; Penger, Hahon, Payne.&Penger, 1991).

3.1) *Inpatients Care Program.* Inpatient care programs differ from community therapy in that it involves professionally trained staff. Again some of these staff were themselves former addicts who were part of a community therapy. Another difference is the structure of the program - community therapy is comparable to a home that is ruled by a seniority system - whereas this program, staff will involve patients to organize activities aimed to enhance their own development. Since this kind of therapy is quiet costly, certain requirements for patients exist as follows:

1. Patients are likely to be harmful to themselves or others;

2. Patients have mental or physical complications;

3. Patients are addicted to more than one drug for over a year with the least possibility for abstinence if treated as outpatients;

4. Patients have already been treated as outpatients several times but unsuccessfully; and,

5. Patients stay in bad surroundings or have mental problems such as being abandoned, left alone, or being unable to live in society.

It was found that patients usually refuse this therapy as they must stay in the hospital for at least 12-14 weeks.

3.2) *Outpatient Care Program.* This is a preferred choice in therapy as it is more convenient, less costly, and needs less staff while providing more services. Moreover patients do not feel they are forced into the treatment as they are able to be with their family. However there are uncertain effects. Patients are most likely to relapse since they always return to the same surrounding where drugs are available. The outcome of this program therefore depends mostly on the patients and their families. If the patients are not determined or are not ready to confront the high-risk situation, or have no family support they are likely to relapse. During the first two to four weeks of the program, patients will join several activities each week. Then they will be asked to a meeting once a week. They are also encouraged to participate in community activities that can contribute to their self growth away from drugs. Since Multimodality Intervention Approach has only been practiced over the past 10 years, research on its effectiveness is still limited. Nevertheless, this approach appears effective for 40-50 % in the long run.

No particular combination of different methods has been officially accepted as most effective. There should be more research.

With respect to the above, the author finds three factors influencing the effectiveness of assistance as follows:

1. Effective assistance requires physical, mental and social support; and,

2. The number of treatment and the length of the treatment have a bearing on success.

The more intensive and comprehensive the course, the more successful it is likely to be. However, we should also think about cost and effects, thus further research for the most effective therapy is needed.

The determining factor of success in any treatment is the eventual realization by the patients that they have an addiction problem and only with a strong determination, will they overcome. They should learn how to control themselves, not to relapse and to be satisfied with their lives. Studies indicate that important factors that make people content with life

are the fact that they can be responsible for their jobs and live in a supportive society. These two factors therefore must be part of any assistance program.

The Matrix Model

The matrix program provides a framework for engaging stimulant abusers in treatment and helping them achieve abstinence. Patients learn about issues critical to addiction and relapse, receive direction and support from a trained therapist, become familiar with self-help programs, and are monitored for drug use by urine testing.

The program includes education for family members. The therapist functions simultaneously as teacher and coach by fostering an encouraging relationship with the patient to reinforce positive behavior change. The therapist-patient interaction is realistic and direct, and non-confrontational or parental. Therapists are trained to conduct treatment sessions in a way that promotes the patient's self-esteem, dignity, and self-worth. A positive relationship between patient and therapist is also a critical element for patient retention.

Treatment materials draw heavily on tested treatment approaches that include elements pertaining to the areas of relapse prevention, family and group therapies, drug education, and self-help.

The following are key components of the program:

Individual Sessions are designed to orient the patient and when possible family members to the expectation of the Matrix Program, complete the administration documentation, and establish rapport with the patient to encourage treatment compliance. The sessions are scheduled weekly for the first two months and then monthly. Additional sessions may be necessary for some patients. Conjoint sessions should be arranged as early in the treatment as possible and should continue regularly throughout the treatment.

Early Recovery Skills Group consists of eight one-hour group sessions that take place over the first month of treatment. During this time, patients receive many of the basic skills they need to achieve initial sobriety. The early recovery skills group provides an introduction to

what is known as the 12-Step Involvement and reinforces the value of 12-Step Participation.

All patients and family members attend the *Family Education Group* for a period of 12 weeks. Since this is the one element of the program that regularly involves family members, the groups are designed to be interactive to allow the group leader to include the most pressing issues for both patients and family members.

Relapse Prevention Group is the central element of this treatment model. Spanning 16 weeks, group participation is designed to deliver information, support, and camaraderie to patients as they proceed through recovery.

Social Support Group is designed to assist patients in learning re-socialization skills in a familiar safe environment.

The social psychology therapy was adapted from the Matrix Program to handle situations where there are many addicts. The therapy is conducted over a 12-week period, rather than 16 under the Matrix Program, either at health facilities or within the community. Addicts are asked to take part in 12-one-hour sessions held twice a week, as follows:

- Session 1. This serves as an orientation for the addicts. They will be given information about the therapy and asked for their willingness to participate.

- In Session 2. Addicts are told through various techniques and activities by the therapist to quit drugs.

- Session 3 helps the addicts deal with outside temptation.

- Session 4 helps the addicts deal with temptation and craving. Family members will be asked to join in.

- Session 5 deals with internal temptation.

- Session 6 explains how the body adapts after quitting drugs.

- Session 7 deals with relapse prevention.

- Session 8 lays out the road map to staying off drugs. The same family members who were in Session Four are asked to join in.

- Session 9 addresses the various problems encountered in rehabilitation.

- Session 10 deals with behavior, thoughts and emotions.

- Session 11 reveals tips for successful rehabilitation.

- Session 12 is on family and drug rehabilitation.

Detailed treatment manuals contain work sheets for individual sessions; other components include family education groups, early recovery skills groups, relapse prevention groups, conjoint sessions, urine tests, 12-Step programs, relapse analysis, and social support groups.

A number of projects have demonstrated that patients treated under the Matrix program show statistically significant reductions in drug and alcohol use, improvements in psychological indicators, and reduced risk sexual behaviors associated with HIV transmission. These reports, along with evidence suggesting comparable treatment response for methamphetamine and cocaine users demonstrated efficacy in enhancing naltrexone treatment of opiate addicts, provide a body of empirical support for the use of the model.

Table 2.1 Intensive outpatient program schedule

INTENSIVE OUTPATIENT PROGRAM SCHDULLE						
Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday& Sunday
Weeks 1 Through 4	6-7 p.m. early Recovery skills 7 - 8 . 3 0 p.m. Relapse prevention		7-8.30 p.m. Family education Group		6 - 7 p . m . early Recovery skills 7-8.30 p.m. relapse prevention	12 step meetings and other recovery activities
Weeks 5 Through 16	7 - 8 . 3 0 p.m. Relapse Prevention Group	12 step Meeting	7-8.30 p.m. Family education Group or Transition group	12 step Meeting	7-8.30 p.m. relapse prevention group	
Weeks 17 Through 52						

- Urine testing and breath-alcohol testing conducted weekly.
- One individual session is included in each of the program phases

2.2 Strategic Management

William F. Glueck (1980) Strategic Management is the set of decisions and actions which leads to the development of an effective strategy or strategies to help achieve corporate objectives. Key points are:

2.2.1 Management using an integrated or total approach
2.2.2 Planning objectives, policies and strategies and planning various principles that form the direction and goals of the organization
2.2.3 All management areas and issues must be covered in the analysis in order for the organization to be able to achieve the highest success, attain its objectives and its chosen identity through strategies and steps.

One important strategy in business is that even the best thought out strategy is analyzed in all aspects after its launch, including financial, implementation, personal satisfaction of various groups of people, and benefit to society, among other expectations. However evaluation of a strategy based only on results of implementation is not enough. This is because it looks back at the past only. Designing the best strategy can be done by placing it in the present context and playing it forward into the future. Data analysis always has to be done within a certain period of time aimed to further developing the strategy or designing a new one. Some changes might have to be made.

The importance of strategic management:

1. It allows the organization to assess problems and opportunities
2. It is conducive for the organization to have clear objectives and directions, and,
3. It allows senior managers to manage their organization effectively and reduces the risk of getting lost in secondary or minor activities, or in changing environments.

A frequent criticism of strategic plans is that they are merely "to-do" lists of what to accomplish over a certain period of time. These plans never seem to come in handy when an organization is faced with a major decision and does not really help it into the future. This criticism arises from the failure of the organization to undertake the needed thorough analysis as part of its strategic planning process. Instead, planners decide

based only on what they think they know at the moment. This makes the planning process more a guesswork. Strategic analysis is the heart of the strategic planning process and must be undertaken.

SWOT-Analysis

SWOT is a tool for analyzing Strengths, Weaknesses, Opportunities and Threats of an organization or a project. It is carried out during workshops involving people from different sections of an organization, and a number of resource persons. A moderator is present to steer the analysis, keep track of time and encourage constant visualization for the organizations. It is estimated that four hours or more are needed depending on the depth of the analysis, and it might also be necessary to break the workshop into sessions to allow for data collection in support of the analysis.

Table 2.2 SWOT – Analysis

SWOT-Analysis	**Definition**	**Typical examples**
Strengths	Any internal asset (know-how, motivation, technology, finance, business links) which will help to meet demands and to fight off threats. *Key Questions:* • What are we good at? • How are we doing competitively? • What are our resources?	Well trained manpower, well established knowledge base, good contact with target group, technology, etc.
Weaknesses	Internal deficits hindering the organization in meeting demands. *Key Questions:* • What are we doing badly? • What annoys our customers most?	Lack of motivation, lack of transport facilities, problems in distribution of services or products, low reputation (the lack of a particular strength).

Table 2.2 SWOT – Analysis (Continued)

SWOT-Analysis	Definition	Typical examples
Opportunities	Any external circumstance or trend that favors the demand for an organization's specific competence. *Key Question:* • What changes do you expect to see in demand over the next years?	Increasing purchasing power, development of new markets for high quality products, new technologies that favor our product
Threats	Any external circumstance or trend which will unfavorably influence demand for an organization's competence. *Key Question*: • What do other people that we don't? • What future changes will affect our organization?	Establishment of strong competitors, lack of cash at household level, governmental regulations that limit free distribution of our product.

SWOT-Analysis focuses on the following questions:

- What are our objectives?
- What do our customers want?
- How do we distinguish ourselves from competitors?
- How can we improve our services?
- How can we distinguish internal framework conditions (strengths and weaknesses) from external framework conditions (opportunities and threats)?

As a precondition for a SWOT session, the organization's vision or the project's objective should be outlined. Participants should share a common understanding of what are the medium and long term purposes of the exercise:

STEP 1:	Start a brainstorming session on the strengths of the organization. Distribute cards and ask participants to write one idea per card on what they consider as strengths. Everybody can give as many inputs as they want. Collect the cards and display them on a board. Cluster ideas and remove redundant inputs. Make sure that all ideas are real strengths, i.e. internal conditions of the organization or project, voiceover opportunities.
STEP 2:	Repeat Step 1 and collect input on weaknesses. Some participants might bring up weaknesses that contradict strengths which have been identified in Step 1.
STEP 3:	Repeat Step 1 by moving to the analysis of opportunities. Look for real opportunities and not idealistic ones. While for all steps it is necessary to identify indicators, it is particularly important for the analysis of opportunities. How do we know that the presumed opportunities are real?
STEP 4:	Repeat Step 1 by analyzing the threats. If you find that step particularly difficult, you might first do a session on creating scenarios or you go to the systemic exercises, such as applying 'The Five Why's or S.C.O.R.E. and then come back to this exercise.

2.3 Balance Scorecard

The balanced scorecard is a management system (not only a measurement system) that enables organizations to clarify their vision and strategy and to translate them into action. It provides feedback around both the internal business processes and external outcome in order to continuously improve strategic performance and results. When fully deployed, the balanced scorecard transforms strategic planning from an academic exercise into the nerve center of an enterprise.

Kaplan and Norton describe the innovation of the balanced scorecard as follows:

> *The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation.*

The balanced scorecard suggests that we view the organization from four perspectives, and to develop metrics, collect data and analyze it relative to each of these perspectives:

- The Financial Perspective,
- The Internal Process Perspective,
- The Customer Perspective,
- The Learning and Growth Perspective,

2.4 Related Research

Thiengbooranatam (1990) defined drug addiction as having a direct effect to both mental and physical health and causes the malfunctioning of the personality, lack of interest, laziness, changed behavior such as aggressiveness and other occurring sicknesses.

Pearson and Little (1969) noted that the addict has a special psychological relationship with his/her addicting drug - a pathological dependency upon the agent that he/she needs and without which he/she cannot deal with stressful factors in life. Later on, such a dependency produces pathological craving, a central feature of all addiction that is reflected in the subsequent reorientation of his/her existence. Obtaining and taking this drug becomes his/her way of life.

Kalyanasuth (1989) explained that drugs affect the sustainability of the nation because if people become addicted, they will have no efficiency, while being easily persuaded and incited.

Yotmanee and Committee (1991) defined drug addiction as a burden to the society and the nation, losing the strength of authorities in subjugating, preventing and solving the problem, wasting nation budget.

Tassananchalee (1995) explained that drug dependency is spreading all over Thailand - heroine, morphine, cannabis, inhalant, opium and amphetamines are all available and consumption is on the increase. However from surveys of drug dependency treatment and information from drug users from all four regions of the country, heroine is the number one preferred drug.

Damrong Vasnasomsith (1993) evaluated drug prevention and suppression in Khon Kaen province. The sample population included officials of the North-East Region Drug Prevention and Suppression Center in Khon Kaen. Two different questionnaires were used and data analysis was carried using SPSS. The analysis showed that a lot of work was being done in drug prevention and suppression and when analyzing each area of work, both positive and negative factors were found. The positive factors include a clear cut policy, honesty of the officials, and good intelligence work and evidence gathering before each arrest or bust. The negative factors include drug addicts not fearing the law, shortage of manpower, vehicles, and communications equipment, and lack of funds to conduct a proper investigation. These negative factors have affected the morale of the officials at the Center.

Mc.Whorter, Laurie Burney (2001) explained the balanced scorecard: An empirical analysis of its effect on manager's job satisfaction and performance evaluations. The strategy link characteristic stresses performance measures linked to achieving organization objectives. The long term and short term trade-off emphasizes long-term decisions by including future-oriented performance indicators. My prediction for each characteristic is for a positive, direct effect on the managerial outcome. In addiction, an indirect relationship mediated by role conflict is predicted between each characteristic and job satisfaction. It was found that the direct effects on job satisfaction are stronger than on performance evaluation, possibly reflecting fundamental differences between them. Job satisfaction represents managers' feelings at a specific time while

performance evaluation reports superiors' past judgments about managers' actions, which support Kaplan and Norton's contentions and the opportunities for future BSC research are promising.

Robinson, Victoria Ann (2001) reported that development of a balanced scorecard for public health using the modified nominal group technique consensus method. It was found that of the 165 indicators presented, 74 were selected by participants as most useful for a balanced scorecard for public health. General themes in each of the quadrants were identified. For example, themes in the public health program performance quadrant included infectious disease, and child and adolescent health. Other themes that emerged from the remaining quadrants included community awareness of public health, involvement of staff in financial and organizational practices, and needs assessments for programs and services.

Nipa Neeskul (2001) studied the development of the service model offered young amphetamine addicts at Thanyarak Hospital. Fourty addicts in a treatment that involved family, school and hospital support, over a period of six months. Statistically significant success was found after the completion of training under the relapse prevention program with more youths finding self-esteem, self-efficiency, and self-discipline. These patients also developed better understanding about amphetamine.

Wanphen Jaiphrathum et al. (2001) evaluated the process and effectiveness of the Matrix Intensive Outpatient Program undertaken at three different hospitals. The method used was formative summative evaluation from documentary review, in-depth interviews, and questionnaires. The findings point to the need for further improvement of the program so that it can be applied to hospitals and health offices. However, this study shows that matrix's intensive outpatient program is suitable for the community because it can conveniently be practiced from a center within a hospital. It is also less costly, requires fewer staff while providing more services. This efficient and cost-effective approach corresponds to the government's policy on drug addiction treatment.