INNOVATION TO MEET ARBORICULTURE CHALLENGES

by Harry L. Mosher

As you read the pages of this journal you will be reminded of the many challenges that arboriculture faces. Pesticide regulations are becoming increasingly restrictive. Lawsuits are frighteningly more expensive and frequent. Insurance companies are dropping tree companies at an alarming rate. Can we meet these challenges and the many others discussed in this journal? The answer is a resounding yes, but with a big IF - IF we fully utilize the innovative talents we all possess but only occasionally use.

Innovators have frequently been seen as individuals who had "weird or crazy ideas", who frequently liked to be off by themselves in a corner doing strange things. In the early 1950's Alex Osborne (1) who has since been called the "father of creativity," changed this view of innovative individuals and declared that "creativity (innovation) is the imaginatively gifted recombination of known elements into something new." This new perspective of innovation gives all of us the opportunity to be creative by developing skills for recombining what we already know. Every arboricultural organization employs personnel that have a wide variety of skills which they have developed through education and experience, and they can call upon these skills to find the solutions to challenges. But how do they go about it?

This three part article gives individuals and organizations in arboriculture a brief look at a well tested process that can be used to develop truly innovative solutions to problems and challenges. The first part discusses how we view ourselves and our organizations and the inherent attributes that resist change. The second part offers a brief look at specific techniques for discovering what the real and sometimes hidden problem is and suggests some ways to generate ideas for solutions. The final article in the series covers how to evaluate the ideas generated and get them accepted and implemented.

Part I, You and Your Organization

How do we see ourselves? The first thing we must all be convinced of is that we have the potential for creativity. If you are afraid of the word creative, don't be. We are not talking about dancing, painting or singing. In the context of problem solving we are looking at creativity as has Abraham Maslow (2), an industrial psychologist and consultant, who said, "Generation of really new ideas are in the depths of human nature," and creativeness is the "heritage of every human being." Every child has it. Give the child crayons and paper, blocks, boxes, almost anything - leave them alone and their ability to create is astounding. Why don't adults possess that same free and inquisitive spirit? Prior to entering their first classroom children have practiced creativity, spontaneity, and enthusiasm for six years only to be told on their first day at school that they must sit still, be quiet, and do what they are told. From that time on the curriculum has little room for creative endeavors. Everyone must progress at about the same rate and do the same things at the same time. Is it any wonder we adults have lost that original spontaneity for looking at everything from a different perspective? Somehow our process for generating truly innovative ideas must recapture some of that original excitement, joy and enthusiasm of little children.

Despite all the words written about the need for innovation and creativity, only a few colleges or universities offer courses that teach those skills. Among the best known is the Creative Education Foundation begun by Alex Osborn in 1954 at the SUNY campus in Buffalo, N.Y. The Foundation offers both introductory and advanced training programs twice yearly, open to the general public on a workshop fee basis. The other alternative is to dig into the literature. Selected references are given at the end of this article.

Fortunately, we can all see ourselves as creative since we all recognized the many challenges facing arboriculture. As Donald MacKinnon author of "In Search of Effectiveness"

says, "creative people see problems where others don't"(3).

Looking at our business. There are two ways to look at arboriculture. The first is the way we usually do. We see what we already have in terms of buildings, equipment, personnel, materials, plans, schedules, organizational structure, cash flow, budgets, supply, demand, and computer printouts. To most managers the all mighty and ever controlling great red dragon is COST. This kind of linear thinking (beginning to end) uses the left side of our brain (cognitive domain) in computer-like fashion. Data in - data out. We pride ourselves on being objective, structured, orderly in our thinking from simple to complex. For the most part this process works well as long as we are engaged in structured, orderly processes that are tried and true. The customer calls, we respond by phone, set up an appointment, diagnose the job, make recommendations, give a quote. If we get the job we schedule the crew, give them instructions, supervise the start, inspect the finished work, send the bill, and wait for payment. Sound familiar? Sound linear? You bet!

The second way of looking at our business is non-linearly, through our feelings, hunches, intuition, and dreams, using the right side of our brain (affective domain). Unfortunately, it is this second viewpoint that we either avoid or even deny as being too subjective to consider. The fact is that organizations that use *both* linear and non-linear processes are the ones that develop the most creative and productive strategies for growth. In our senario about the linear nature of a tree service job we could, and should, use non-linear thinking to examine each stage of the process for new approaches to the job.

Ask yourself this question; better yet, put it down on paper. How much more productive would you like your organization to be in 6-months? Be specific. Set a goal of a percentage of customer contacts, or reduced hours per job, or any element of your business where opportunity for improvement exists. Can we handle chemicals more safely? Can we provide better diagnosis of tree conditions? Can we spend less time on maintenance? As you look at the gap between what you have now and where you would like to be 6-months from now, you will discover that this gap can only be closed with IDEAS. The only trouble with ideas is that they require our organization and us as individuals to change—change how we think, behave, perform, plan, interact with each other and with our customers. These changes can cause some unsettled feelings which we frequently resist.

Killer phrases and how to avoid them. Resistance to change is often expressed through killer phrases spoken in the guise of objectivity and analysis. The mark of highly successful businesses is their willingness to change, to seek new and innovative ideas and run with them; to find a new niche in the demand for goods and services which they can fill while still sticking to the main thrust of their orgainzational effort. But for every success there have been countless failures because of killer phrases like, "its been tried before", "policy will not permit it", "the boss will not allow it." We could list another hundred you have heard before. How often have you listened to a fellow employee say, "now I want to play the devils advocate here." Suprisingly, that individual thinks he/she is doing everyone and the organization a favor by pointing out just what is wrong or could go wrong with a new idea. These individuals cannot resist criticism for a moment. They criticize a new idea before it is hardly out of the mouth of the originator. Sid Simon has written a marvelous little book entitled "Negative Criticism" (4), which humorously points out the fallacy of the negative criticism we inflict upon ourselves and others in the name of helping. Why not defer judgement? Why not explore every aspect of an idea for its freshness, newness, creativeness? Have no fear; the time will come when we must evaluate our ideas, but let's not crush them before they are fully developed. I am sure we have all experienced the situation where a group we belong to is looking for ideas. Perhaps your Boy Scout troop needs to raise money, or your church wants to build an addition. What happens to your willingness to suggest ideas if your first suggestion is rudely rejected with, "that's a rotten idea", or, "don't be ridiculous that will never work". Won't you mentally say to yourself, "nuts to you, that will be the last time I'll make a suggestion". Wouldn't it be much better to smile and respond to every suggestion with positive reinforcing phrases like,

"that's good, let's write it down and look at it closer later". Or, "that's an interesting idea, who can build on it"? The point is that killer phrases do little to advance our attempts to approach problems creatively. At the outset then, we need to create an atmosphere where everyone is willing to share in the idea finding process knowing full well that their ideas will receive ready acceptance. If you must criticize, keep it to yourself by writing it down on paper. This purges it from your immediate consideration and you can freely join the continuing discussion.

Breaking out. We and our organizations are creatures of habit. Bound by the norms, practices, policies and other identifiers which establish what we are. In short we feel comfortable with who we are, how we operate, whom we deal with, and we resist upsetting the applecart—or even tipping it a little. Peters and Waterman in their book, *In Search of Excellence* (5), emphasize time and again that risk-taking is a mark of organizational excellence.

It is all well and good to say break out!, be creative!, take a risk! but for most of us that kind of prodding does little good. Our response is usually, oh yeah—let's see you do it. What we need is the structured approach of a process called "Creative Problem Solving". As we said in the introduction, don't say, "who me? I'm not creative. I can't sing, dance, paint, or play an instrument." Maybe not, but with the proper training and practice we can all learn to generate new and productive ideas far beyond what we thought possible.

The creative solving process we suggest is summarized by the acronym **O F P I S A** which stands for: **O** = Opportunity finding, **F** = Fact finding, **P** = Problem finding, **I** = Idea finding, **S** = Solution finding, **A** = Acceptance finding. Using OFPISA is no quick, painless process, but it can be fun and productive. Why should we have fun when we are working? We joke, and sometimes it is in a sarcastic way, when we say, "time goes fast when you are having fun". But it's true—when we enjoy what we are doing the job goes better and faster.

Notice also that each step in the process includes the word FINDING. The use of the word FINDING is not by accident for ours is always a search, and searching frequently requires perseverence, and diligence to the end. Only when we are willing to scour the depths of the process and stretch our efforts to the maximum do we find those truly creative solutions that produce the big payoff.

Another element in our search for innovative ideas in arboriculture is the element of TIME. The OFPISA process takes time, and we must give of our personal and organizational time to reap the benefits. We cannot allow ourselves to fall into the trap of "we don't have time for an activity like this that does not directly add to the immediate productivity of the organization." I am sure you would not say, "we don't have time to increase our profits by 20%, or, "Preventive maintenance on our chain saws and trucks is a waste of time". And yet that's what you would be doing if you do not allocate uninterrupted time to this activity. All highly productive and successful innovators take blocks of time to develop new ideas and strategies. When you see a manager with feet up on the desk and eyes closed, don't be critical, that may be the most important work of the day. Excellent companies pull out teams of top executives and key technicians for hours or even days at a time to deal with special problems or challenges. But we should not relegate the process to emergencies. When all is going well and profits are rolling in—that's the time to look ahead for new opportunities. Successful organizations do not remain successful if they keep doing the same thing over and over again no matter how successful they have been in the past. Remember, there is someone or some organization out there that is not resting on their successful past but is rather seeking new opportunities and new solutions that will leave you and your organization far behind. We have seen this happen dramatically in our nation's steel industry. An entire industry that reaped profits but did little to improve plant productivity to the point where foreign manufacturers got so far ahead that domestic steel mills could no longer compete. Thus for all of us, the rule should be that status quo is unacceptable. No progress means no business in the long run.

Writing it down. As you or your team of problem solvers work on the OFPISA process be sure to write everything down on paper. The en-

tire process is circular and you may wish to come back to a previous stage to examine new alternatives. So write everything down. It takes a little time but is well worth it.

Part II OFPISA in Arboriculture

O = Opportunity finding. Now the stage is set. Let's begin with OPPORTUNITY FINDING. Opportunity for what? For everything! There is not one element of arboriculture that does not contain opportunities. Picking the best opportunity is the challenge. An Italian economist, Vilfredo Pareto (1848-1923) postulated that 80% of the world's wealth was held by 20% of the population. His postulate has since been transposed into the commonly used 80—20 rule which says that 80 percent of the cost of a product is in 20% of its parts, or that 80% of our problems are caused by 20% of our equipment, 20% of our customers, 20% of our suppliers, or 20% of our personnel. If this rule of thumb has any validity, we might as well begin with the elements of our business where a creative solution would have the greatest impact. In other words, if you are working to improve a process dealing with personnel you should identify those few individuals whose decisions or actions have the greatest impact on the business.
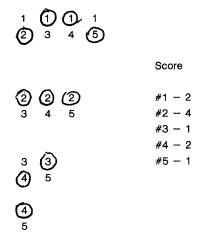
Problems or opportunities? Arboriculture has unlimited opportunities. "Opportunities," you say. "I call them problems." A story here will make the point. There was a manager who drove his subordinates wild at times. When they walked into his office with a problem that they expected him to solve, he would make it clear to them that this challenge provided them opportunity to grow, to learn more, to be better problem solvers, more independent thinkers. He did not refuse to help, but he wanted them to learn to be less reliant on him for all the answers. Seeing problems as opportunities creates an atmosphere of enthusiasm, eagerness, spontaneity, and excitement since the solutions not only solve the immediate need, but uncover new avenues for unexpected growth.

Opportunities can also be external, as in the search for a special niche where services or products are not currently being offered. Excellent companies do this very well and are willing to be at risk by investing capital to develop the product, process, or service and then giving it a reasonable exposure. If it is a success, it continues. If it fails, they are alert and get out before any major losses. Without that initial trial, that initial risk, that initial thrust into the niche, they would miss what might be a most profitable venture.

Arboriculture obviously has many opportunities to choose among. How do we decide which one to begin with? You may use Pareto's law, or that inner hunch, or even take a vote among the team. When there are a number of opportunities and you are having a difficult time zeroing in on the one to attack, you might use what is called "paired weighting." In the process of "paired weighting" you compare each opportunity with all the others in a sequential manner. Let's look at an example. Suppose you have the following five opportunities or challenges you wish to choose among: 1) preventive maintenance time, 2) training of personnel in proper pesticide handling procedures, 3) errors in tree diagnosis, 4) customer records and 5) effective use of crew time.

Set up a chart for the five opportunities as shown below:

Score
#1 — 2
#2 — 4
#3 — 1
#4 — 2
#5 — 1

Each of the opportunities is compared with all the others. On the first line you compare #1 with 2,3,4 and 5 by asking, "Which would I rather work on, #1 or #2?" If you prefer to work on #2 put a circle around the 2. Then ask yourself, "Which would I prefer to work on #1 or #3?" If you prefer to work on #1, circle 1. When you have asked yourself or taken the vote of your

group about the preference for work on every op-
portunity as compared to every other opportunity
with the highest number of circles would appear to
be the one most favored as a place to begin. If
later in the process that opportunity is found im-
practicable you can refer back to your chart for
the next opportunity to investigate. In our example
number 2 is the opportunity that the group sees
as being most important to begin with. This pro-
cess takes a few minutes but it is far more
analytical than tossing a coin or choosing the short
straw.

F = Fact finding. Fact finding always presents
us with a dilemma. It often seems we never have
enough facts, and yet if we keep gathering facts
forever we will never get to work on the opportuni-
ty or challenge. Too much information often
results in what has been called "mental dazzle."
The trick is to know when to quit gathering data. If
we have diligently pursued the familiar who, what,
when, where, why, how, guideline words for
gathering data, we will be ready to go on. The
word diligently is the key, for if we get to the end
of the process and find in the Solution Finding
phase that we have overlooked a major fact we
may have to back up and begin again. But
remember, even if this happens, be grateful that
the process uncovered it before any lasting
damage was done or time wasted. In our example
we would want to know WHO handles chemicals,
WHO has had any training, WHO trains people in
pesticide use, etc. WHAT chemicals have been
used, WHAT chemicals are on the market, WHAT
procedures do we follow now, etc. WHEN can we
find time for training, WHEN are we most likely to
be inspected by EPA, WHEN will new regulations
be put in effect, etc. WHERE will we store
chemicals, WHERE will we obtain training,
WHERE will we locate new spray equipment
which meets new standards, etc. WHY do we
want to be in the spraying business, WHY can't
we subcontract spraying, WHY is spraying impor-
tant, WHY will spray training for all employees be
essential?

Getting the facts is made easier now-days with
the advent of the computer. The smallest
organization can own a microcomputer with a
database software program that enables you to
store, search, sort, and retrieve information.

Records on personnel, equipment, customers,
training, licenses, budgets, accounts, and adver-
tising are at our fingertips for minimum cost.

When we are satisfied that we obtained as much
information as possible considering the time
available, cost, and magnitude of the opportunity,
we are ready to find out what the opportunity real-
ly is.

Problem finding. Good managers are known
for their ability to get right to the heart of the pro-
blem. Other managers grasp the first statement of
the problem with little additional concern.

Getting to the heart of the problem or opportuni-
ty requires a clearly written statement of what we
are dealing with. Notice we said "written" for only
when we put our thoughts in writing are we forced
to think them out precisely. Unfortunately, we fre-
quently have someone in the crowd that im-
mediately says, "Why bother with all this talk? I
know what the problem is --" and immediately con-
veys his infinite wisdom to the group as if
everyone else has been out of town for months.

From records kept by many problem solving
groups it is evident that the first statement of the
opportunity (problem) is rarely the clearest. A form
of statement that has proven highly successful in
focusing on the central problem is: IN WHAT
WAYS MIGHT I ----. For example: *In what ways
might I provide training for all personnel in
pesticide handling?* Even that statement is not
good enough. We need to keep writing IWWMI
statements about the opportunity over and over
again, each one with a slightly different twist
dependent on the language used. MacKinnon (2)
calls this "cognitive flexibility," the willingness to
see problems in a different light. In our example,
the first statement contains the main words pro-
vide, training, all, personnel, pesticide, and handl-
ing. Try getting a different view of the problem by
setting these key words as in Table 1.

With these key words we might write some
IWWMI's that sound like:
*IWWMI: buy a training package for key laborers
in the use of chemicals.
*IWWMI: convince every worker to recognize that
poisons must be carefully stored.

After writing as many of these statements as we
can, we must choose from among them the one
that best states how we feel about the opportuni-

Table 1. Key words and substitutes.

PROVIDE	TRAINING	ALL	PERSONNEL	PESTICIDE	HANDLING

Now what other words could be substituted?

PROVIDE	TRAINING	ALL	PERSONNEL	PESTICIDE	HANDLING
buy	teaching	everyone	laborers	chemicals	use
arrange	learning	some	workers	insecticides	mixing
force	awareness	a few	sprayers	silvicides	carrying
convince	recognition	key	supervisors	herbicides	storing
demand	supervision	no one	customers	poisons	applying

ty. Our choice of which seems the best statement of the challenge could be facilitated by the "paired weighting" scheme we described before.

The Problem Finding step is critical for it directs the remainder of the entire action. If we accept the first opportunity statement that comes along, we may miss the innovative solution. Another story will make the point. A bank was considering charging for their checking accounts, which had been free for years. They were concerned how to implement the charge without antagonizing customers. Their statement of the problem would have been: "How can we begin charging our customers for checking accounts and not make them mad." After considerable Fact Finding and writing many IWWMI statements the following clear statement of the challenge emerged. "IWWMI attract more capital to the bank." Notice that there is not even a mention of checking accounts. The bank had become interested in checking accounts and what they cost to operate because money that had traditionally stayed in the bank for days or even weeks, from the accounts of large depositors, was being withdrawn electronically overnight the day of the deposit. These electronically withdrawn monies were no longer available for the bank's use. As a result of this clear statement of the challenge, the bank developed new innovative ways to attract monies by providing an entirely new spectrum of customer service. These new innovative services brought in far more dollars than would have the charges for checking accounts. With the opportunity written in the clearest terms possible (at least for now) we can go on to finding ideas for the solution.

I = Idea finding. If there is a fun part to the process it is Idea Finding, since at this point we are free to be as divergent in our thinking as possible. No linear thinking here! What we are after is as many and varied ideas related to the challenge as we can develop. One of the keys to idea finding is deferred judgement. Don't evaluate, just ideate. Ideas are funny things. For some reason we are our own worst critics. On a spectrum from bad, or worthless ideas, to the very best, we somehow reject even our own ideas unless we rate them really high in evaluative terms such as practicable, affordable, timely, etc. Deferred judgement applies to individuals as well as groups. Let the ideas flow no matter how crazy they seem. Later when it is time to evaluate them you may find tucked inside a crazy idea the germ of a practicable and marvelously innovative opportunity for change and progress. If you are tempted to evaluate an idea, resist! As we said before, one thing you can do so that you are not too frustrated by holding back is to purge criticism from your thinking by writing it down on paper. Once written, you will not be fearful of forgetting it and you can freely continue to participate in searching for new ideas.

Ideas come in fits and stages. We start out with a great rush and then nothing, or at least a plateau appears, until something happens that triggers a new rush of ideas. One of the dangers is that we give up too soon. Some of our very best ideas come just when we are about to call it quits. Researchers and others working in the field of creative thinking have developed many strategies for generating ideas so that those of us who reach an early plateau can proceed at a rapid pace. For our discussion here we will deal with just a few of

the more frequently used strategies. The literature cited at the end contains a number of references which suggest other ways to generate ideas. Gillette of Gillette safety razor fame always used the alphabet when seeking new ideas for improvements in his razors. Apparently he was successful since the number of changes in design goes on and on and the company continues to keep its share of the market.

One of the best known and most frequently used techniques has the acronym SCAMPER which stands for:

S - Substitute	To have a person or thing act or serve in the place of another. What else instead? Who else? Other place? Other time?
C - Combine	To bring together, to unite. How about a blend? Assortment? Combine purposes? Combine ideas? Combine materials?
A - Adapt	To adjust for the purpose of suiting a condition or purpose. What else is like this? What other ideas does this suggest?
M - Modify	To alter, to change the form or quality. Change meaning, color, motion, sound, odor, taste, form, shape?
Magnify	To enlarge, to make greater in form or quality. What to add? Greater frequency? Stronger? Larger? Add new ingredient? Multiply?
Minify	To make smaller, lighter, slower, less frequent. What to subtract? Diminish? Lessen? Split up? Less frequent?
P - Put to other uses	To be used for purposes other than originally intended. New ways to use as is? Other uses if modified?
E - Eliminate	Remove, omit, or get rid of a quality, part or whole. What to cut out?
R - Reverse	To place opposite or contrary, to turn around. Opposites? Turn it backward? Turn it upside down? Turn it inside out?
Rearrange	To change order or adjust. Different plan, layout or scheme. Other sequence? Change pace?

Another good idea stimulator is called Pack Rat. Empty your pockets or pocket books. They contain many objects, each of which has attributes which you can relate to opportunity. Listed below are a few of the items, and their attributes.

Keys - rough, grooved, shiny, unlock, twist, jingle, tarnish, hard, colored
Lip balm - lubricate, greasy, twist, retract, covered, available on demand, disposable container, instructions, fragrant
Kleenex - soft, pliable, colored, absorbent, squeezable, interlocked, delicate, translucent
Money - purchasing power, hard, round, artistic picture, mottos, dates

Each of these attributes is related to the IWWMI you selected to generate new ideas. Let's take our original example related to the pesticide handling.

IWWMI provide training for all personnel in pesticide handling

Your key might suggest "unlock" which might suggest unlocking the talents of a particular employee as a trainer—a person who might take an interest in the project and learn all the ins and outs of pesticide handling and pass this on to others. The attribute shiny might suggest "an award" for the best idea generated by an employee about how to get the training done most effectively. Greasy might suggest "slippery" which might lead you nowhere. In other words not every attribute is going to produce a solution—just try it and go on. Each of the attributes can be examined as a potential idea stimulator. But remember, don't evaluate: defer judgement. Don't be afraid to voice silly or strange solutions such as: Close down you business for a week and send everyone to Hawaii where hula girls will entertain while the chief administrator of the EPA gives personal instruction in the proper handling of pesticides. Watch out! What are you thinking? Did you evaluate that idea as being too goofy to even consider? See what I mean about deferred judgement?

Part III. Coming to Grip With Reality

When all the frivolity and fun of ideation is over and you feel you have exhausted many of the ideation techniques it is time to go on. But with all those ideas, where do you start? This is the time to examine those silly or crazy ideas just in case there might be a germ of an idea in one of them which might be translated into some semblance of reasonableness. With this accomplished, go down your list of ideas and pick out the 10 or 12 ideas that have the most appeal to you or your group. Here is where you need to let your affective domain go to work. Which ideas make you feel comfortable? Which ideas do you have a hunch might have some merit for your company? If you are not entirely happy with hunches and wish to be more "objective," you could use "paired weighting"

once again as a technique for deciding which few ideas appeal to you or your group most. Now comes the time we have all been waiting for, the time to evaluate.

Good evaluative criteria are essential if you are to discriminate between possible solutions. The temptation is to list cost as the number one consideration. Even though cost is important it should not be used as a major criteria. If an idea is a good one and makes the company a million dollars would it matter if it cost $100,000? A criterion which is closely related to cost but is more precise would be, "Do we have the surplus cash flow to finance the project." But even that may not be a criterion since part of the process includes developing strategies for obtaining the necessary cash for the project. Here is a list of typical criteria. You can add your own which pertain to your specific organization.

1. Can the project be completed in time to meet a customer deadline?
2. Do we have the personnel with the necessary skills to complete the project?
3. Is the modification within the specifications of our product durability?
4. Is the solution safe for personnel?
5. Will present equipment do the job?

Lastly we should ask the question, "Will the solution be fun?" We add this criteria because we all know that we work better when we like what we are doing. Let's abbreviate these criteria so we can put them on a form: 1) meet deadline?, 2) skills o.k.?, 3) within specs?, 4) safe solution?, 5) equip. o.k.?, 6) is it fun?

Shown in Table 2 is a simple form you can use to list the ideas down the left side and the criteria for evaluating them across the top. A scale of 1 to 5 was used to rate each idea against the criteria. When you use the evaluating form be sure to go down each column so that you are mentally comparing each idea against the same criterion. The idea with the highest total score on all the criteria is # 2 and the idea that appears to be the best at this point in the process.

We can improve our evaluation using these same criteria by weighting them. Your problem solving group might feel that "meeting the deadline" should receive more weight in your evaluation and "possessing the necessary skills" is not as important because you have a good training staff that could train your personnel in a very short time. In our example let's use a weighting of 1 - 2 - or 3. Table 3 now includes the weighting factors in the header. The value of the rating is thus the original score multiplied by the weighting factor.

Table. 2. Criteria (Scale 1-5)

Idea	Meet deadline?	Skills o.k.?	Within specs.?	Safe solution?	Equip. o.k.?	Is it fun?	Total
# 1	2	1	2	3	3	2	13
# 2	3	4	4	5	3	4	23
# 3	2	1	2	3	1	1	10

Table 3. Criteria (Scale 1-5, Weighting 1, 2 or 3)

Idea	Meet deadline? Wgt. 3	Skills o.k.? Wgt. 2	Within specs.? Wgt. 1	Safe solution? Wgt. 2	Equip. o.k.? Wgt. 2	Is it fun? Wgt. 3	Total
# 1	2×3=6	1×2=2	2×1=2	3×2=6	3×2=6	2×3=6	28
# 2	3×3=9	4×2=8	4×1=4	5×2=10	3×2=6	4×3=12	49
# 3	2×3=6	1×2=2	2×1=2	3×2=6	1×2=2	1×3=3	21

As before with the unweighted form the idea receiving the highest score is idea # 2 and therefore the best idea at this point in the process. If you should follow this procedure and find that the total scores do not appear significantly different it only means that you need to go back and sharpen up the criteria since they did not discriminate well enough between your ideas.

Once you have examined the ideas and chosen what appears to be the best solution, the easy part is finished. Many fine ideas have never been implemented because people and organizations gave little attention, if any, to ACCEPTANCE FINDING.

A = Acceptance finding. You may have developed what seems to you as an ideal solution to the challenge or opportunity you are faced with, but can you get the necessary support to get the job done? Acceptance finding contains elements of both planning and salesmanship. Planning involves the same questions we first asked at the beginning in fact finding; Who, What, When, Where, How, and Why but with a different thrust.

In our example about pesticides we may have decided that the best idea for providing training in the use of pesticides is to hire a consultant and suspend operations for three days to get the job done. If we have to sell this idea to higher management we would want to answer questions like:

WHO might be in opposition to the proposal?
WHO might be favorably placed to exert influence?
WHOM do I need to convince?
WHAT favorable circumstances of time or place would make the acceptance more likely?
WHAT might lead others to support the idea?
WHAT ways might others benefit from the idea?
WHAT other challenges might arise if the idea was implemented?
WHAT resources need to be acquired?
WHY might others hinder - help?
WHY should particular individuals lend their support?
WHEN is the best time to implement the idea?
WHEN is the best time to approach management?
WHEN could the idea be implemented earliest?
WHERE might you begin to get maximum visibility?
WHERE is the best place for the training to take place?
HOW can the ideas be translated into action?
HOW can provisions be made to anticipate delays?
HOW will you pretest the idea?
HOW will you get feedback on progress?
HOW can you plan to assure a smooth flow of men and materials to the project?

Making your plan. With answers to these and other questions you can proceed to make a writ-

ten plan to clearly outline each step of the way. If all the preparations are made, and all the questions answered, even before they are asked, you are prepared to use your selling skills to explain the benefits and overcome any objections. Now that the plan has been accepted and the support has been found, you can proceed to successful implementation.

A word of caution. We have progressed through the steps of OFPISA as if there were no road blocks or detours, but life sometimes isn't that easy. You may find that at any point in the process you missed some information or a new and even more important challenge has appeared which forces you back into a previous phase of the process. Have heart—we never said it was easy. The most important thing is that without the process we would never have considered all the elements and the chances of final success would be far less.

Trying it out. Practice OFPISA. Gather a few of your fellow workers and try out the process. But don't pick a challenge which is too important to your organization. In fact, it is better to practice the process on a challenge that has nothing to do with your company at all. The daily newspapers contain unlimited challenges, but pick something simple the first time through and have fun with the process.

Snap decisions. One other point. We said earlier that the process takes time, and so it does. But we should also consider applying the process where snap decisions are necessary. Instead of responding instantly to a challenge take a few minutes and use the process. Escape to a separate room for 10 minutes if necessary. This short time and even the superficial use of the process will result in better decisions than the toss of a coin or a word spoken in haste.

Arboricutlure has many challenges and many opportunities that lie ahead, and they can be better met by using the well structured and creative problem solving technique we labeled OFPISA.

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Abstracts

Nielsen, D. G. 1986. **Understanding tree/insect relationships.** Grounds Maintenance 21 (2): 94, 96, 98, 100.

Insects are masters at exploiting available resources because of their small size, rapid rate of develop-ment and high reproductive capacity. Some insects, such as gypsy moth caterpillars, Japanese beetle adults, and black vine weevil larvae and adults, have broad host ranges and attack many different kinds of plants. Others, such as bronze birch borers and spruce gall adelgids, attack only a single kind or a few kinds of plants. Both kinds of insects are highly specialized in that they use plants in prescribed ways only under certain conditions. In all cases, native insects on native hosts growing on native sites have coevolv-ed with their hosts so that both host and insect can survive the relationship. A working hypothesis for tree managers might be that most pest problems result from opportunistic pests exploiting weakened hosts. Certainly, trees that are healthy before a pest attack are more likely to recover than are trees in low vitality. Although this hypothesis requires proof, it is a conservative approach for conceptualizing tree/pest rela-tionships.

Boes, T. K. 1986. **Allelopathy: chemical interactions between plants.** Am. Nurseryman 163 (2): 67-72.

Walnut tree toxicity to other plants is a long-known phenomenon. Pliny the Elder probably recorded the first observation of the detrimental effects of walnut trees on other plants in 37 A.D. Detrimental biochemical interactions between plants are referred to as allelopathy. Allelopathy is caused by plants releasing chemical compounds into the environment. Allelopathy influences man-made as well as natural ecosystems and is an increasingly important concept because of its potential use in biological weed con-trol. Chemicals causing allelopathy are not involved in the primary reactions of plant metabolism. Therefore, scientists consider them secondary plant products. Secondary plant products are believed to contribute to the survival of the producing organism. Juglone helps ensure the survival of walnuts by regulating the surrounding vegetation. Over 200 species are sensitive to juglone and are rarely found within the root spread of the trees. Allelopathy probably plays a role in all vegetative systems. In natural ecosystems, it influences the rate of plant succession as well as the vegetative pattern in an area.