Modeling With NLP:
Capturing and Transferring Expertise in Organizations

Summary

Modeling is a process for capturing, encoding, replicating and transferring expertise. There are a lot of experts who sit out to teach others what they do. They are rarely successful. The evidence for this is that their students are rarely as good as they are. If experts really knew what they did and could train others, then their students should be as good as they are. This is rarely the case. There is a simple reason why this is the case. Experts largely operate out of unconscious competence. In short, they are not consciously aware of what they do. Modeling is a process for capturing and transferring unconscious competency.

Modeling is the ideal front end to training. Most training is based on someone's theory of what works. Modeling, in contrast, is based on what successful performers actually do. With a modeling front end to training it is possible to substantially reduce training times and increase performance levels.

Commonly known concepts like best practices and bench marking can be refined and encoded in much greater precision by applying the distinctions, components and approaches of modeling. Also the results of bench marking can be analyzed more completely because of modeling's focus on both outer and inner aspects.

Modeling is the process though which what is now marketed commercially as Neuro Linguistic Programming came into being. Neuro Linguistic Programming (or NLP for short) is an attitude and a methodology that leaves behind a trail of techniques. The trail of techniques is what is marketed commercially as NLP. The methodology is called "modeling". Most people have focused on the trail of techniques and ignored the methodology that created them in the first place. This session will focus on the modeling process itself. It will emphasize one approach to modeling which is called Advanced Behavioral Modeling.

Modeling begins with an expert or experts who can perform a given skill at a high level. The skills of the expert are elicited through interaction and are based on careful observation and interviews. The elicitation process utilizes NLP concepts including values, beliefs, strategies, representational systems, sub-modalities and meta-programs. Once the elicitation process is complete the information is synthesized into a model which is then translated into a training program and can also be used to design selection criteria for new hires and to redesign the man-machine interface of equipment.

Neuro-Linguistic Programing

Neuro-Linguistic Programing (NLP) is a behavioral science change technology which was developed by Richard Bandler and John Grinder in the early 70's in California. It began by observing what psychotherapists actually do and how they are able to produce change. The first results were methods of how to build rapport, how to ask relevant questions (meta model), how to use anchors (classical conditioning) to utilize resources, how to change perspectives (reframes), how to use different thinking styles (visual, auditory, kinesthetic and digital) and how to utilize hypnotic language patterns (Milton-model). Later on NLP adopted, and refined a lot of other models from different fields like cognitive science (left right brain, TOTE, mind-body connection), pedagogy (learning styles), sport-psychology (mental training) and became a collection of useful tools and models in the area of communication and behavioral modification. Especially in Europe NLP gained popularity in the business community and in most European business trainings (leadership, sales, communication, conflict resolution, team-development) elements of NLP are used even though not always identified as such. NLP assumes that we act solely on our individual model of the world which we construct in interaction with the world, so it is compatible with the view of the “radical constructivists” like Maturana, Varela, Watzlawick, von Foerster, et al. Other early influences on the NLP model came from Gregory Bateson, Virginia Satir, Milton H. Erickson, and Fritz Perls.

NLP and Modeling

The Pareto law states that in an organization 80% of the results are produced by 20% of the people. What do those 20% who are the high producers do that the other 80% do not. What would happen if the skills of the 20% could be captured and transferred to the 80% that only produce 20% of the results? Modeling is a process that makes this possible.

What is interesting is that when you have a bunch of people there are always some of them better in their performance than others. We all know the 80/20 rule which says that 20 percent of the people produce 80 percent of work. And it would be nice to have more of these people. So in any organization you always have some experts with incredible performance and a lot of people with mediocre or poor performance. But what is fascinating is that a lot of people want to become experts, and they try hard and work and train hard. So why is it that those people have such a hard time becoming experts. Sometimes they even have an expert mentor who they observe and whose behaviors they try to. But in most cases this does not work.

The problem is this: What really is necessary to make the performance of the expert reproducible is to find out what's going on inside of his head, how he thinks, what kind of decision he makes, where he puts his attention and so on .

We need to find out not only what are experts doing behaviourally (outside) but also what they are doing mentally (inside). When we have captured and encoded the expertise we can design a training program to build up those components which are used by the experts. NLP has developed over the years a series of useful distinctions and models which help us to figure out and encode what is going on inside an expert.

NLP Components:

Physiology pulse rate, muscle tone, blood pressure, balance etc.- might be important factors in most sports.

Attention defines where the focus of attention is set to and since the amount of conscious awareness is limited to seven plus minus two chunks the selection of attention is important .
Sensory acuity describes the ability to make fine distinctions within a sense .
Metaprograms are a set of patterns of information processing, behavioural reaction, attention direction and preferences of thinking .
Beliefs are rules and statements of causalities and cause effect relations .
Values are abstract notions of things we like to get or avoid.
Strategies are a sequence of mental representations like pictures, sounds, or feelings.
Identity is the role in which the expert sees him/herself.

MODELING

Preface

Modeling integrates sophisticated behavioral technologies based on neuro-linguistic programming, accelerated learning methodology, human typological analysis and value theory. These training notes aim to describe in brief and in plain language: 1) what Modeling is, 2) what it does, and 3) how it works.

Background

As the United States and other high technology societies are forced to compete in a global economy, there is a growing awareness that the enhancement of human and organizational productivity is imperative. This awareness is predicated on the fact that technological breakthroughs are occurring at an increasingly rapid pace; while, at the same time, there has been little, if any, increase in the ability of human beings to acquire and apply new knowledge. A balance must be restored between the material innovations of high technology and the increasing demands upon the human element to keep pace.

Studies conducted by organizations in both the public and private sectors have examined the underlying forces that have been transforming our society and shaping our future. These studies have revealed that:
1) The interactions among high technology systems, human productivity, and human potential are some of the greatest challenges that face the world today.
2) A significant need exists to match each new technology with the human capabilities required to operate that system in an optimal manner.

Institutions and individuals within the academic community are engaged in researching the concepts of high performance, human potential and organizational transformation. They recognize that the major contributor to high-performing systems within organizations is the human element. The corporate world, too, has begun to emphasize the importance of the human element and has discovered the benefits of changing personnel policies, administrative structures and training programs accordingly. Modeling has evolved from this recognition by academia, industry and government that enhancing human performance within organizations shifting to higher

material technologies offers the greatest opportunity to meet the challenges of a rapidly changing environment.

Modeling

What is Modeling? It is a model-based training process for rapidly and cost-effectively capturing, replicating and transferring any expertise, ability or skill. Modeling is a process for replicating human excellence. Embodying the innovative combination of many disciplines in a creative new relationship, it has produced an entirely new way to train people to higher levels of expertise faster.

Modeling is a unique model-based program for training that is a combination of proven behavior management techniques from neuro-linguistics, value theory, human typological analysis, advanced learning theory, artificial intelligence, psychoanalysis, behavioral psychology, management science, systems science and cybernetics. These various disciplines have been synthesized into a technology which offers organizations training programs that will enhance human and organizational productivity.

What makes Modeling different from other models of individual and organizational behavior is that it extracts critical components of carefully chosen experts and presents these refined components to students systematically and expertly through a carefully designed training program. In short, it identifies patterns of excellence and projects those patterns for others to emulate and replicate through a structured and cost-effective training process. The patterns identified by Modeling techniques are the sets of beliefs, values, attitudes, heuristics, internal mental processes and physical activities that characterize certain skills. These patterns are shaped into a model that is used to transfer to students those behavioral differences that make certain people more effective than others with similar training and backgrounds. Additionally, Modeling trainers recognize and change limiting patterns of beliefs and thought processes in trainees.

Human thinking processes are complex and highly individualistic. All human beings absorb information and experience through their five senses (visual, auditory, kinesthetic, olfactory and gustatory), but every individual absorbs information and experience through these senses differently. This leads to a unique, individual perception of the world and a particular subjective reality. Modeling studies the subjective realities of experts, i.e. how their visual images, auditory processes, tactile sensations and internal feelings, beliefs, values and attitudes are sequenced together as specific internal representations that enable a person to make decisions, be motivated, learn, perform a skill and create.

Modeling is a process for profiling, capturing and transferring expertise and high performance behavior rapidly and cost-effectively. There are people in any field who are recognized as being superior. They may be labeled “experts” or “champions” or “masters” or “geniuses.” In any case they are able to perform far beyond the norm set

by their peers. There is a perennial argument as to whether such people are born or made. Probably both are partially correct. Undoubtedly such people start with talent or innate ability which predisposes them to greatness. This greatness is further developed by a combination of education or training and experience.

These people often think that they know what sets them apart as uniquely accomplished. They often seek to transfer their talents and abilities to others through trainings, books, and audio and video tapes. However, the only realistic measure of the success of this transfer process is whether the people to whom the information is transferred can perform as well as the expert can. Sadly, this is seldom the case. One is forced to draw the conclusion that the expert either is not aware of critical aspects of what they do or is unable to make the transference of their ability to others.

Now, for the first time, it is possible to profile, capture and transfer expertise and high performance behavior. It is possible to give a far better account of what an expert does than they are able to give themselves. If experts knew what they did and were able to transfer their abilities, then their students would be as good as they are. This is seldom the case. The reason for this is because a lot of what an expert does goes on outside of their conscious awareness. In fact unconscious competence is the hallmark of expertise. Modeling is a way to decipher unconscious processes and make them explicit. Most importantly, it is also a way of transferring this information and behavior to others in a highly efficient fashion.

Modeling is by design strictly practical. It works! It was developed, tested and is being used with outstanding success within both the corporate and athletic sectors and the U.S. strategic military and intelligence environments.

The bottom-line result: a training technology that guarantees substantial increases in individual performance -- rapidly and cost-effectively -- as well as increases in the quality, productivity and profitability of any organization that uses this tool to model the best.

Through Modeling training processes any individual or organization can now replicate the skills and expertise of the world's best models of performance and install that top performance behavior in themselves or throughout an entire organization. It is now possible to rapidly replicate and, where desirable, universalize any expertise, i.e. to identify high performance models, both within and without an organization, and replicate and transfer the key factors of their high performance to others.

How It Works

As every telephone has a specific code number, so every person has a unique behavioral code. Through a straightforward, though highly sophisticated technical process of profiling, observing and interacting with high performers, Modeling identifies and "de-codes" the high performer's often unconscious patterns and behaviors. These

"modeled" patterns of inner behavior are then replicated systematically and can be transferred to others through a unique and powerfully reinforcing process.

Modeling focuses on process as well as content; it is equally concerned with “how” one does or thinks as with “what” one does or thinks. It considers six key aspects - each of which is directly correlated with high performance - and all of which have been largely unrecognized and ignored by most trainers and educators. These are the: (1) enabling beliefs, (2) heuristics, (3) values, (4) ability to make refined distinctions within a particular representation system, (5) internal mental approach, or cognitive strategy, and (6) physiology of the expert or high performer. Let us consider each in turn.

(1) Enabling Beliefs - Beliefs either support or hinder excellent performance. This is a fundamental tenet emerging from research into accelerated learning in the last several decades. People perform well only when they have a set of beliefs that support high performance. Whether you think you can or think you can’t, you are right. The beliefs that support superior performance may be elicited through a sophisticated process. Before they can be installed in others, however, it is first necessary to identify and remove disenabling beliefs that are already present in those others. These disenabling beliefs can be elicited from trainees by the same process in which enabling beliefs are elicited from subject experts. The key process involves the removal of the disenabling beliefs in trainees and the installation of supporting or enabling beliefs in their place. Modeling has techniques to effect this belief change process.

(2) Heuristics - These are the rules of thumb that a person actually uses to make evaluations and judgements in problem solving. They are largely unconscious. Modeling elicits and transfers these heuristics.

(3) Values - Values are the things that people move toward or away from. They are what people spend time, energy and resources to achieve or avoid. Values are thus the keys to motivation. High performers are highly motivated to respond as they do. Modeling techniques are used to elicit the values that motivate the expert to superior performance and to install similar values in trainees.

(4) Representations - Experts pay attention to factors in their environment that other people often don’t notice and make critical distinctions about things that other people lump together. People take in information about their environment through their senses. Experts know what data to look for. They are able to represent critical aspects of their environment and to correlate these aspects with appropriate responses. Modeling determines how the expert represents their world.

(5) Internal Mental Approach (Cognitive Strategy) - A “strategy” or “internal mental approach” is the sequence of representational system changes that result in the generation of superior performance. It is often fallaciously assumed that rote and repetition are the keys to increased performance. Actually repetition or practice is counterproductive if one is practicing error or inferior performance. The door to expertise is not through blind repetition of random activities. Instead it is through the

rehearsal and mastery of the specific mental syntax and sequence of the expert. Modeling elicits the strategy of the expert and installs this in the trainee. This is the most effective and efficient way to develop expertise. Without it no amount of practice and effort can ever produce peak performance.

(6) Physiology - It has long been understood that there is a direct connection between the mind and the body. Research in the last decade has led to a scientific understanding of the mechanisms of the relation between the mind and the autonomic nervous system, endocrine system, immune system and neuropeptide system. Experts are able to place themselves in mental and physical "postures" that lead to increased performance. These postures may be elicited and others trained to adopt them. One of the key elements of any posture is the rate, depth, rhythm and location of breathing. The mind cannot function without a proper oxygen supply. Stress and poor posture lead to fatigue both mentally and physically. Modeling recognizes this and ensures that trainees adopt postures that support the expert performance of the activity involved.

As a result of dealing with these and other critical variables, Modeling can decrease training time and dramatically increase performance for any random group of trainees. It is often assumed that anyone may be trained to do anything to a superior level. This may be true, but the expenditure of time and resources to do so may be exorbitant. Common sense and empirical evidence suggest that people differ in their degrees of talent or innate ability to perform different functions. This is another way of saying that certain people begin with sets of enabling beliefs, motivating values, and physiologies and strategies that are closer to those of experts in a given area than other peoples are. Obviously these people will develop expertise more rapidly, achieve higher levels of expertise, and retain that expertise longer than others who are not similarly endowed.

Modeling elicits and transfers expertise and high performance behavior. Importantly, as a key component of that system, a unique profiling process has been developed that identifies candidates who are already predisposed to high performance. These candidates already possess some of the beliefs, values, physiologies and strategies of the subject experts. Preselection of appropriate training candidates always results in increased levels of performance. Modeling both makes this preselection possible and provides an optimum training method addressing all aspects that lead to subject mastery. These two aspects of Modeling synergistically combine to produce a quantum leap over any other method currently in existence to capture and transfer expertise.

Although the primary goal of Modeling is to elicit and install excellent performance, there are several other byproducts of this process that lead also to dramatically increased productivity in an organization.

Steps of the Modeling Process

With this general overview of the Modeling Process and its products in mind, let us now turn to a more detailed analysis of the specific steps of the process. Modeling extracts critical expert patterns, verifies that they are necessary and sufficient to replicate expert behavior, and using advanced training technology develops a training program to transfer these patterns to others both expeditiously and efficaciously.

The primary methods of modeling are the elicitation of the strategies, beliefs, values and overt behaviors that are critical to the task as opposed to those which are purely idiosyncratic to the expert. The following definitions apply.

1) “Strategies” or “mental syntax” are the specific sequence of mental processes involved in performing the behavior.

2) “Heuristics” are the rules of thumb that a person actually uses to make evaluations and judgments in problem solving.

3) “Beliefs” or “presuppositions” are the philosophy, attitudes, and beliefs that cause one to perform a particular task in a competent fashion.

4) “Values” are the determinants of behavior that motivate an individual to expend energy and resources to achieve or avoid a particular outcome. They are tied to the emotional aspects of an individual.

5) “Overt behaviors” are the physical processes involved in carrying out a behavior. There are six basic phases in the modeling process. These phases are illustrated in the accompanying chart.

1. Identify and select experts or models who consistently exhibit the behaviors of excellence to be modeled.

The initial phase in the Modeling process is the identification and selection of the model (or models) of excellence. There is a direct correlation between the excellence of the model and the amount of expertise that can be captured and transferred. Modeling personnel work closely with in-house personnel to develop a set of uniform criteria for selecting experts. Some indicators used in this process are supervisory and peer review, performance records and direct observations.

Modeling allows an individual or group of individuals to replicate expertise. It can be used to bootstrap an organization to near the level of the best performers in the organization. In modeling experts, it is valuable to have several experts with whom to work. This allows the use of contrastive analysis to aid in separating what is essential to expertise from what is merely idiosyncratic to the individual expert. It is also useful to model a few average performers (contrast subjects) in order to contrast the critical differences between the expert and the average performer.

2. Elicit or extract the model components of expert behavior.

Once a model or models are identified, the next phase in the Modeling process is the elicitation of the critical components of expert performance. The goal of this phase is to assure that the components extracted from the expert are all and only those which are critical to expert performance, i.e. are both necessary and sufficient. This is the most crucial step in the modeling process. It involves the determination of the physiology, beliefs, values, attitudes, heuristics and cognitive strategies that enable the experts to perform in an outstanding manner. The key is to separate the essential from the idiosyncratic and to identify the distinct behavioral differences that lead to performance differentials.

The skill tasks must be decomposed to break down the skill into specific components which can be managed and sequenced to produce the expert model. To do this, it is necessary to observe the expert in his work environment performing the actual skill to be modeled. The boundaries of the skill, beginning and end point, are determined, and the scope, direction and sub-skill partitioning are defined. This transforms a large abstract skill into smaller manageable chunks that can be modeled efficiently.

Next, the expert is interviewed analytically and diagnostically. Using certain keys to internal process, (i.e., eye movement patterns, gestures, body postures, breathing patterns, voice shifts, and other physiological cues) as well as external behaviors and the content of utterances, the modeler extracts and records beliefs, values, heuristics and thought and behavioral patterns. Extraction methods include sensitivity analysis, structured and unstructured interviews, direct observation and skill analysis, limited information tasks, time-context constraints, and skill refinement techniques.

The modeler checks his initial observations and interview records through simulations and through returning to the behavioral milieu of the expert to make further refinements. Each expert and contrast subject is, in turn, subjected to this cycle of observation - interview - observation. Additional analytic and diagnostic interviews occur in subsequent steps of the Modeling process.

In interviewing and modeling experts it is important to ensure that the expert is performing in “expert mode.” Even experts have bad days. The goal is a model of expert performance and not a model of an expert having a mediocre performance. In practice this means working with the expert over time to ensure consistency. It also helps to have some way of assessing the experts performance on any given day. This may involve appraisal by another expert or by some external objective criteria. Everything must be done to build rapport with the expert and to maintain them in an optimal performance state.

3. Synthesize the information collected in phase two about the components of expert behavior.

Once one or more experts and contrast subjects have been modeled, the next phase is to synthesize the data gained from the elicitation process into a provisional model. This involves five tasks.

The first is to explicate the components which comprise the behaviors to be modeled. Using a variety of techniques, the modeler diagnoses and analyzes the skills to be performed and creates a first approximation of the model. This involves dividing the skills of the expert into sub-skills or a collection of specialized behaviors and mental processes necessary to perform the expert behavior. This database reflects the modeler's best approximation of all relevant strategies, values, attitudes, beliefs, heuristics and behavioral components involved in the expert behavior. In short, the modeler further explicates the extracted components of expert behavior, identifies the critical ones, creates a knowledge base, and develops a hierarchy or syntax of the critical behavioral components.

The second task in the synthesis process is to iteratively test and interpret the database to identify the critical components of the behavior. The modeler uses behavioral interference techniques, draws analogies, poses counter examples, and utilizes other conceptual tools to identify the rules governing the behavior. The modeler searches for and discovers the deep structural patterns underlying the behavior and prunes the data to reduce the model components. During this process the model's constraints are identified as well as the boundaries that partition the sub-skills. The result of this process is a critical knowledge base comprised of the beliefs, values, attitudes, heuristics, strategies and physiologies necessary to map the skill.

The third task of the synthesis process is to discover the order or system of the components and to show how they interlock to form the behavioral pattern. It is essential to identify the important components, their hierarchy and web of interconnections. The modeler must always keep in mind that it is a system that is being modeled and not isolated components. The goal is to optimize the system and not just to optimize the components. Thus it is necessary to consider the interactions between the components as well as the components themselves.

The modeler interprets and integrates the critical components and networks of the model and devises methods to organize and control the steps to perform the skill. The interaction between the components is identified and codified. The model is then ready for testing to exploit redundancies and to increase its reliability.

The modeler continues to test and elicit behavioral components from the expert. As more knowledge is added to the design, the model incrementally approaches the competence of the expert. The modeler knows that efficient student performance of the skill to be trained depends on the quantity and quality of critical knowledge incorporated into the model.

The fourth task is to test and refine the model. This model is tested by installing it in the modeler himself or in one or more carefully selected trainees. The test for the

success of the model is the ability of the modeler or trainee to produce results equal to or nearly equal to those of the expert. When this happens, the model is complete. If pieces are missing it will be necessary to return to the expert to elicit further information. It is possible at this stage to improve or streamline what the expert does to enhance the model even more. This is called "generative modeling" as opposed to "isomorphic modeling." It is also possible to create a composite model which combines elements of several experts to produce an overall model that goes beyond the capabilities of any of the individual experts modeled.

The fifth task is to formulate a final model. As the model is tested and revised, a final model emerges that passes the tests of efficiency and effectiveness. This model is in a pure form and produces the best results. If training candidates are properly screened, this final model may be passed to them directly, producing the highest level of expertise. If the model is to be transferred to a randomly selected group of trainees, it will be necessary to generalize or universalize it. The consequence of this process is usually some dilution of the model. The result, in either case, will be increased performance by trainees in far less time than conventional training methods could produce.

4. Design a model based training to transfer the expert performance competencies.

Once a universal model is formalized, the next phase is to design a training program to transfer the expertise captured in the model. This phase in the Modeling process incorporates advanced training technologies. It involves placing and maintaining trainees in an optimum physiology, removing disenabling beliefs, installing enabling beliefs, installing motivating values, rehearsing the proper physio-mental syntax and sequencing and transferring content knowledge.

Prior to the training itself, the modeler, in-house trainers and managers look closely at the content of existing courses and together identify and isolate course modules that are essential to learn the skill. The critical course content and the behavioral, belief, value, heuristic and thinking components represented in the expert model are integrated, ordered and networked to design a training system that will transfer the modeled skill to others. Evaluation criteria and documentation are generated to evaluate the efficacy of the Modeling process.

5. Conduct a model-based training to install the expert performance competencies.

Once a training design is formalized, the next phase is to conduct a pilot training. This is conducted by trainers who are highly skilled in Modeling techniques. The result will be trainees who are able to perform at a much higher level of expertise than achieved by conventional training methods and in less time than conventional methods. During this initial training Modeling. trainers debug any quirks in the initial training design. This leads to a final training design.

A major difference between Modeling and conventional trainings is the emphasis on "how to" and on behavioral modification. In training motivation and knowledge of what to do are often not enough to ensure expert performance. Often trainees are highly motivated and know what to do and even why they should do it, but are still unable to perform the required behavior. This is either due to some internal blockage or a lack of "know how." Modeling training focusing on removing any internal performance blockages and on installing and rehearsing "how to" components until they become automatic.

6. Finalize the training and pass off to in-house trainers.

In many situations it is more cost effective for Modeling. modelers and trainers to train in-house trainers to conduct the model-based course than for Modeling trainers to conduct the training on an ongoing basis. Since training methods utilizing advanced training technologies differ significantly from conventional training, it will be necessary to train in-house trainers in the use of these methods and in the conduct of the actual training programs. In-house trainers will teach their initial course under the supervision of Modeling trainers. Modeling monitors and evaluates the results of the training to ensure quality control and provides final documentation to the user.

This is an overview of the modeling and training process. The bottom line result of the Modeling process is a substantial increase in individual performance as well as in the quality, productivity and profitability of an organization. With Modeling technology it is possible for the first time to capture and transfer expertise and high performance behavior.

Conclusion

This has been a list of some of the key components and training principles incorporated into Modeling profiling and training. The bottom-line result of Modeling is a substantial increase in individual performance, as well as in the quality, productivity and profitability of an organization. With Modeling it is possible for the first time to capture and transfer expertise and high performance behavior rapidly and cost-effectively. It enables an organization to replicate its best employees.

SELECT MODEL OR MODELS OF EXCELLENCE