"WHAT WE DON'T MEASURE ABOUT HUMAN RESOURCES:

Towards a conceptual framework for analysing the role of soft variables in human resources management modelling

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Low retention of valuable employees and difficulties in finding qualified candidates for recruitment are two issues managers face in the high growth markets, like the banking and telecom industries, in Romania today. While this paper addresses issues in the Romanian human resources (HR) market, it also reflects a growing concern among consultants around the world about retention of talents in companies (Deloitte, 2004; Holton & Naquin, 2004).

External HR consultants and managers in Romania are complaining about the difficulties of making long term plans for their firms because of the high turnover of specialists. Literature indicates that functional turnover, that separates the poor performers in the company, is efficient for the companies (Hollenbeck& Williams, 1986; Dalton, Krackhardt & Porter, 1981). Yet consultants are complaining that the best, not the poorest performers are leaving. Thus turnover represents a problem because it entails greater costs than benefits and it disrupts organizational continuity (Lum et al, 1998).

Employee retention is an important issue, particularly in high growth markets, yet the companies don't seem to always make the right steps towards achieving a high retention goal. Deloitte consulting, in a report (2004) about the acquisition and retention strategies affecting corporations around the world in the next 4 years, show that the typical US company spends fifty times more on recruitment of a 100.000 $ professional than it invests in his annual training after he has been hired. The average cost to replace an employee is one and half times one average yearly salary. New employees can take a year or more to master their jobs. Moreover, a company that focuses on external talent, but does not breed from within, can erode the commitment of internal candidates.

Retention is a complex construct, not just one variable (Lynard & Dvorsky, 2003) and it is affected by several factors, among which are: work overload, role ambiguity and job satisfaction (the overall degree in which a person likes his job). It would seem obvious that these intangible factors are the ones companies need to manipulate and integrate into their long term strategies if they want to keep their valuable employees. Yet too few companies even consider such issues.

Soft, or intangible, variables often create measurement difficulties, but that does not mean they are not quantifiable. We believe it would be very useful to make managers see the impact of these intangibles on the turnover, on the quality of employees and on the profits of the company. We will review, in what follows, why we believe the attitudes are central to our problem and some of the reasons for the difficulty of grasping intangibles.

Work related attitudes and "soft" variables in HR management

Attitudes as stocks

Why talk about attitudes in relation to human resources problems and to their system dynamics modelling? The majority of organizational scientists would agree that attitudes play the central role in their discipline. Attitude is defined as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour" (Eagly & Chaiken, 1993). Olson and Zanna (1993, p.119) note that most attitude theorists would agree that :

"…(a) evaluation constitutes a central, perhaps predominant, aspect of attitudes; (b) attitudes are represented in the memory; and (c) affective cognitive and behavioural antecedents of attitudes can be distinguished, as can affective, cognitive, and behavioural consequences of attitudes"
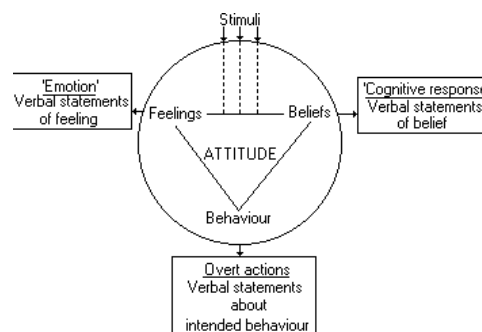
After Spooncer(1982)

There are many different definitions of 'attitude'; however, we believe that the one advanced by Schiffman and Kanuk (1996) contains most of the major concepts: "a learned predisposition to behave in a consistently favourable or unfavourable way with respect to a given object ". The three component model of attitudes emphasizes that attitudes persist across time and situations, that are limited to socially significant events or objects (like the work environment) and that they involve at least some degree of abstraction, meaning that it will take a while or an important event to change an attitude (Hogg& Vaughan, 2002).

According to Anderson's (1971, 1980) information integration theory, most of our attitudes are constructed in response to information we receive about our attitude objects. People function as complex problem solvers and as vigilant evaluators of new information, and how we receive and combine this information provides the basis for attitude structure. From all the attributes of the information, the salience, for example, and the order in which the information is received become important determinants in the ways they are processed. As new information arrives, people evaluate it and combine it with existing information stored in memory. In Anderson's approach, people acquire and re-evaluate attitudes by a type of cognitive algebra, which involves 'mentally' averaging the values attached to discrete bits of information that are collated and stored in memory about an attitude object.

This description of the information integration process is similar to the stock definition in the system dynamics methodology. The similarity is relevant in what Anderson describes as memory and the difference between what is already stored and the new information. In the SD words, Sterman (2000, p.192) describes stocks as:

"Stocks are accumulations. They characterize the state of the system and generate the information upon which decisions and actions are based. Stocks give systems inertia and provide them with memory".

We believe that attitudes are a very good indicator of the state of the system. The goal of the attitude, that of maximum value, against which actions are weighed, is constantly re-evaluated in the light of the information regarding the work environment changes.

One might very well ask: why show the variables that represent people's attitudes, since they are so hard to measure? And since the instances preceding them have, in the end, an influence on turnover, why not link the precedents directly to turnover and show a

mathematical formula of the relation that will encompass the mediating factors (that is the attitudes) in its formulation?

When people ignore accumulations in their structural maps, they reduce the time span of their thinking (Hauge, 2004; Sterman, 2000). Many actions have consequences that materialize after a long time. The Beer-game is a well-known management example of what happens when people ignore the orders that they have sent, but where they not yet have received the goods ordered. The goods on order can be represented as a stock, and when people order more goods because they only ordered an amount of goods last time period, and not look at their total amount of orders, they experience systems that have tendencies to overshoot and collapse (Sterman, 2000).

The purpose of this paper is to show the managers what are the things that they are excluding from their decisions. This can only be done by explicitly showing the delays and the stocks they are ignoring, because SD research has been striving to show that explicit representations of the instances we consider when making decisions, are powerful instruments in improving decision making. As Sveilby, Linard and Dvorsky state (2005):

"To the extent that qualitative variables are perceived to be relevant to the problem under review, and would otherwise implicitly be factors into managerial decision making, it is far better to confront the choice values openly and explicitly rather than allow them to be hidden. In this way, decision makers and stakeholders are better able to identify the implications of the qualitative assumptions and to challenge their usage or valuation if this seems desirable."

The relation between attitudes and behaviour

The relation between attitudes and behaviour has been long studied in social psychology (for a comprehensive review on the attitudes' research see Azjen, 1991; Azjen and Fishbein, 1980). Current research views attitudes as a construct that precedes behaviour and guides our choices and decisions for action, even though it is not something directly observable (Hogg& Vaughan, 2002). The word "attitude" comes from the Latin word *aptus* which means "fit and ready for action". Describing the relation, Azjen (1991) notes that:

"Intentions to perform behaviours of different kinds can be predicted with high accuracy from attitudes toward the behaviour, subjective norms, and perceived behavioural control; and these intentions, together with perceptions of behavioural control, account for considerable variance in actual behaviour."

The literature shows that attitudes are *predictors* of what people will do, so it is worth measuring them from that perspective. In the broadest sense of functionality, attitudes facilitate adaptation to the environment (Eagly & Chaiken 1993). A word of caution, however: establishing a correlation does not establish causation, though it often provides *evidence* about causation. To establish causation, other reasons must be ruled out. For example, sending people to training and increasing retention may *correlate*, but it is not necessarily true that one *causes* the other. In other words, caution is required if we want to demonstrate a relation between attitude and behaviour, both have to be measured appropriately and for a longer period of time to avoid confounding factors (Furnham, 1997). This is exactly what the organizations are not doing: they are measuring behaviour, but not attitude. Why is it so hard to take into account such intangible variables as the attitudes, although there it least some recognition of their importance?

Measuring intangibles: the accessibility of data bias

The importance of the "soft" indicators that we are stressing is not obvious to the decision makers, even though literature, especially the industrial and organizational psychology literature, has a long history of research on how satisfaction influences turnover and productivity. What we have here is a problem of VISIBILITY. We will try to build on psychology literature to support the inclusion of the "soft" variables in our model.

Causal search and attribution

Many of our beliefs concern the relation between one quantity and another and we are concerned with such relationships because we want to decide whether to manipulate one thing in order to affect another (Barron, 1995). What is the relation between the amount of money I invest in training and the performance improvements I get? How about the job satisfaction and the training opportunities? Over the long term, how do my recruiting efforts reflect the quality of the people I have in the firm? The normative theory points towards statistical correlation, but people systematically violate this normative view.

Correlations are very often confused, in everyday reasoning, with *causal* relationships (Barron, 1995). Research about the probability heuristics shows that people have a bias towards correlating two instances simply by associating the presence of two, and ignore the combination of probabilities of one or both being absent (Smedslund, 1963). Subjects typically attend to the probability of the outcome given the "present" cue only. In a case of associating the probability of a disease with the presence of one symptom for example, Smedslund shows that 85% of the nurses investigated stated there is relation between the two, even though the number of times when the symptom was absent and the disease present was almost as high as when both are present. This is very relevant in organizations, when associating instances in the surrounding environment and picking up the present cues helps develop very simple cause and effect relationships, which lead to the misperception of dynamics.

Documentation of attributional activity is, from an experimenter's point of view, a difficult task to explore. However, there is reasonable consensus (Weiner, 1985) that search for a cause is elicited by either an unexpected event or by a failure in an otherwise familiar and successful task. In other words, policy designers will only look for a cause if something goes wrong or unexpected, and then stop looking when they will have found a first possible cause to explain that. Vandenbosch & Higgins (1996) found that as long as companies were doing satisfactorily, they made little effort to improve their decision rules. As Hauge (2004) reports, a search activity's success or failure is evaluated based on short-term feedback, and an activity's past record of accomplishment determines its likelihood to be used the next time the search procedure is implemented. The search procedure, therefore, controls the adaptation of the policies, the learning techniques, and the key organizational goals. Vandenbosch & Higgins (1996) found that scanning behaviour, more often than other types of information acquisition, led the policy designer to find new and challenging information that contributed to mental model building. Sometimes, however, policy designers are not able to perceive new and unusual information, and in such cases, scanning behaviour will result in mental model maintenance. This may very well be the case of the ignored soft variables.

Salience of quantitative data

An important factor that influences the choice of policies is the salience and relative easiness of collecting quantitative data, versus the more unquantifiable variables. In an experiment

by Feldman (2004) about the culture of objectivity at NASA, it is shown that misunderstanding leading to the explosion of Challenger and Columbia spaceships resulted from two general aspects of NASA's culture: (i) an over-confidence in quantitative data went hand-in-hand with a marginalization of no quantifiable data, leading to an insensitivity to uncertainty and a loss of organizational memory; and (ii) problem definition and solution creation were constructed as if they were independent of organizational goals, resulting in an inaccurate estimation of risk.

This over-confidence in quantitative data is specific to a broader context: accessibility of information—the ease (or effort) with which particular mental contents come to mind. This is a well documented phenomenon (Tversky & Kahneman, 1974; Kahneman, 2003). Kahneman is arguing that the accessibility of a thought is determined jointly by the characteristics of the cognitive mechanisms that produce it and by the characteristics of the stimuli and events that evoke it. Among others, the determinants of accessibility subsume the notions of stimulus salience, selective attention, specific training, associative activation, and priming. Because quantitative data is more salient than qualitative data, it is highly likely to observe a bias towards the first type. Muller (2001) also shows that more complex decision tasks lead to a higher deviation rate and that in the presence of differences between the numbers of outcomes, subjects prefer the simpler alternatives.

The bias towards salient data needs to be documented in the case of complex decision making in HR policies. We believe that the process of building up positive work related attitudes, like job satisfaction, is one that is limitedly transparent. We define "limitedly transparent" as containing "variables that cannot be observed directly, either because we are only capable of observing the symptoms, or because the system contains so many variables that we have to concentrate on the few that we regard as the key ones in the system" (Hauge, 2004, p 29). Career opportunities, distributive justice and job satisfaction are just some examples where only their *effects* on productivity are easily observable. The way in which they influence, however, are most often not measured or unclear, and thus unattended to. We will show, in what follows, the current policies used in Romania, and why we believe they are inefficient.

Current policies description

Companies have a clear and growing bias to build human capital through organization-sponsored, formal training (Davenport, 1999). The main solution to a wide range of problems is training: expensive training, team buildings outside the company, in mountain or seaside resorts, training that enchants the eye and makes the employees believe that the company cares for them. Companies spend small fortunes on training, but fail to measure their impact. As a leading company in training and consulting in Romania says, "there are extremely few clients that are interested in the impact of their training session on anything: employee morale, turnover, retention" (Tabacaru, unpublished field study; unreferenced, 2005). As long as it is done, they have a load off their back, they have done something. If it doesn't work, it must be the external conditions of the market that are to blame. But if training is done isolated from the real problem, what good will this do?

Holton and Naquin (2004) show that human resources development (HRD) initiatives are often too expensive or too difficult to measure and that has led to a credibility and accountability gap with regard to development. The investment in training, only one of the activities aimed at improving the employees' job performance, represents a huge financial expenditure, as high as the hiring costs. As Baldwin and Ford (1988) point out, only as little as 10% of all expenditure is projected to pay off in performance improvements resulting from the transfer of knowledge to the job, mainly because people do not transfer their knowledge in the real work situations. Training represents the HRD activity with the smallest chance of the person actually learning the point, compared to other activities, such as group learning through joint task assignment, doing your own research or even asking a colleague for help (Deloitte, 2004).

The current policies to address the specialists' turnover in Romania are two: the "buy" and the "train" strategy or policy. The "buy" strategy means that companies are attracting highly qualified employees by setting high salaries, even higher than those of the people currently employed on the same position. The "train" strategy is meant to increase the quality of the employees and give them an impression that the company cares for them, but it also acts as a motivation tool per se, as often it is done without any relation to the training need (Tabacaru, unpublished field study; unreferenced, 2005):"If employees ask for training, the managers give them training because otherwise they will leave. It is fashionable to give

training these days, but managers don't care what type of training they give", says one external HR consultant (Tabacaru, unpublished field study; unreferenced, 2005).

The expected outcomes of the current policies are as follows:
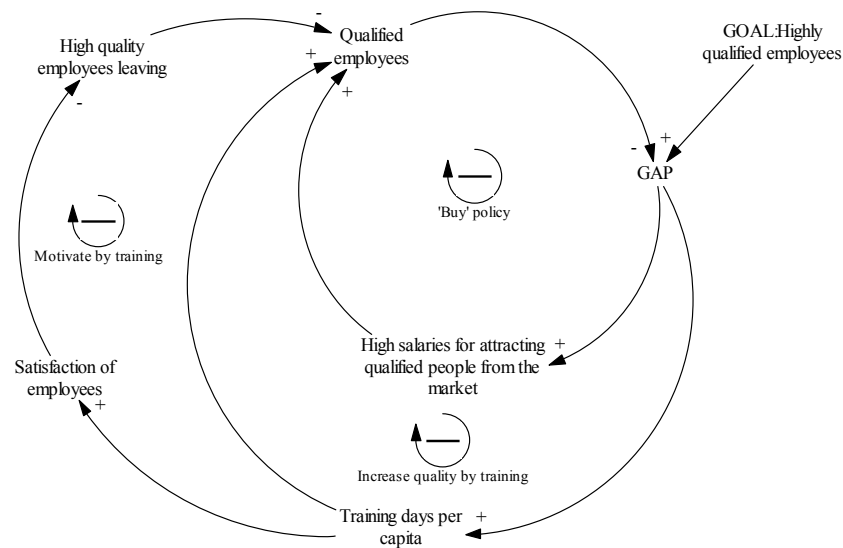

Current polices and their **assumed** effect

This causal loop diagram shows that the policy makers (righteously) believe that by setting high salaries, they will attract high quality employees, thus solving the problem they got by losing good quality employees in the first place. What policy makers fail to see is that setting high salaries for the incoming employees affects the current employees in the long run. Also, it transmits an implicit signal that the company is not looking to promote, but rather the only chance for the employees to promote or get a raise is to be "bought" by another company themselves.

"Buying" quality employees from the market is a quick solution when there is a high need for employees. This policy's effect is that the company will offer very attractive salaries and benefits, often above the level current employees have. The feedback ignored (ignorance is noted in the CLD with a dashed line) is that the hiring policy breeds dissatisfaction for the current employees, which will in the end leave because they will get higher salaries elsewhere, as most companies have similar policies. In this way the very policy the company is using to increase retention is turning against itself.
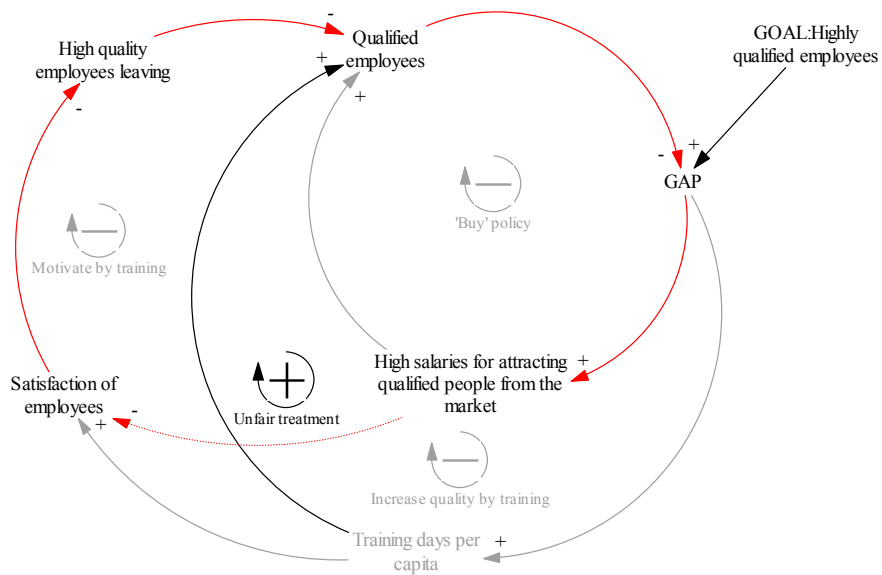
Ignoring the hiring policy feedback

With the "train" strategy, companies are trying, on one hand, to train their employees and get them to the quality level required, and, on the other hand, to motivate them not to leave. There are several problems with this policy. First, training in NOT a motivation tool, training should be a need based intervention. Training is not among the determinants of job satisfaction, as literature clearly shows (Agho, Price, & Muller, 1993). The experience of the author as a trainer shows that very often people end up in training sessions without any clue as to why they are there. With a backlog of tasks to do when they return, training becomes a de-motivation tool.
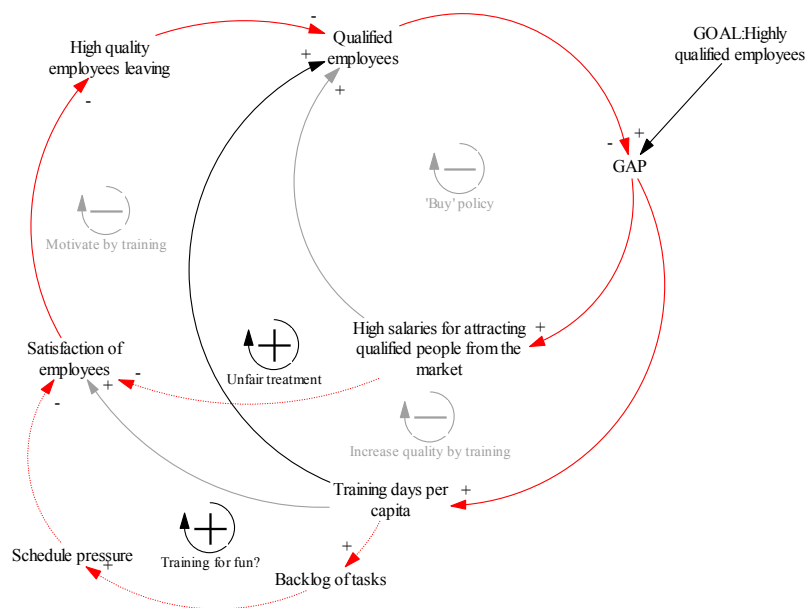
Ignoring the training feedback and misperceiving causal link

Second, training by itself is not an efficient tool of increasing the quality unless the company encourages transfer and allocates resources (people and policies) that encourage this transfer. As literature shows (Holton & Naquin,2004), one of the problems with analyzing the output of the training process is that the utility and value of training are too often taken for granted. Education in our society has mainly a positive value associated to it: proposals for training rarely have a negative reception by business executives who in other decision may be more harsh and analytical (Hinrichs, 1976). Very frequently the training is accepted as an end in itself, without careful analysis of how it contributes to the broader business objectives. It seems that this non-discriminative acceptance of training is also widely spread in the Romanian market.

Another problem is that policy makers seem to expect training to give results immediately. However, from the moment you send people to training, until they actually apply what they have learned, there is a big delay. Transfer to workplace conditions of the knowledge acquired in class doesn't just happen; employees need support from both their manager and their peers. It is clear that organizational support for transfer is essential, and that is one factor that Romanian companies seem to fail to take into account.Using the newly acquired knowledge takes time, so the effect on the quality is not immediate. If it takes longer than expected, the company may assume that the training does not have effect, so it might stress more the "Buy" policy, thus creating even more dissatisfaction among current employees, which will continue to leave. These links are bolded.
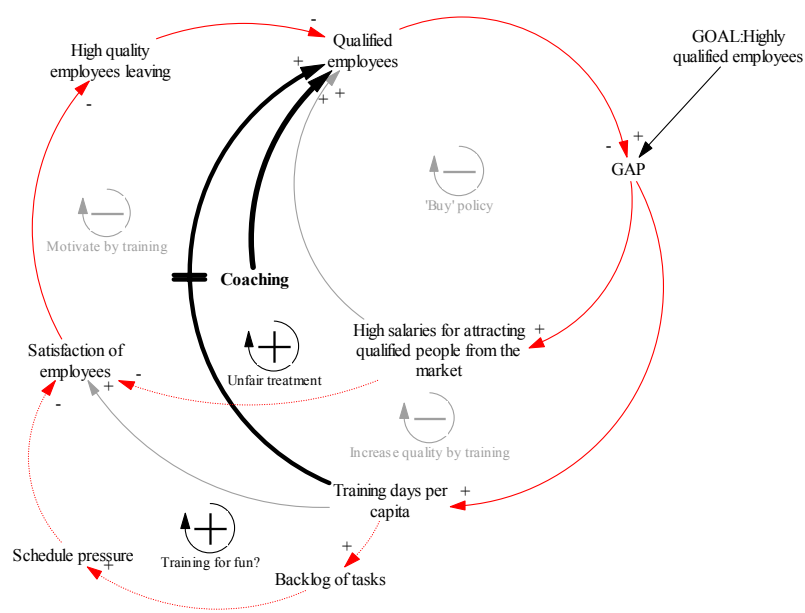
Ignoring the coaching feedback

We modelled the coaching effect as external because it represents the effort the employees make to help their colleagues or subordinates transfer the knowledge acquired in training. This is not an automatic process and it involves training of its own kind. We are not referring here to on-the-job training, but to something that requires something else: an open attitude towards feedback giving and receiving, about overt communication concerning performance, etc.

To make it clearer, let's take the example of an employee who goes to, say, a communication skills training. He spends 3 days learning about effective ways to communicate, to give and receive constructive feedback, to avoid being defensive when receiving critiques, etc. This should definitely improve the quality of his work, no matter what that work is, since communicating better avoids misunderstandings, re-work, and saves time. Now imagine this employee comes back to the office and tries to apply some of the things he has learned, but his colleagues mock him, his boss doesn't care and he has no chance whatsoever to apply his new knowledge. He will surely forget it quickly.

An effort concentrated on HR development reflects an open attitude towards learning. This is not very costly, it just implies proper training, and, most important of all, it implies an organizational climate that encourages transfer of learning. It is the author's experience that such learning and development policies encourage people to seek development themselves, and feel very rewarded when they are sent to training, because they have desired this. It is not so easy to model this complex network of decisions that finally lead to the employee feeling that the company cares for him, but it surely takes much more than just sending people to training.

To sum up, we have two issues here: on one hand, we have an ill defined problem, and on the other hand we have ineffective policies to address that problem. Let' take a closer look at the basis for designing such policies.

The key motivators behind HR policies in Romania, as the field study (Tabacaru, unpublished field study; unreferenced, 2005) revealed, are the following indicators (the list provided is an exhaustive one and it includes all the decision variables the subjects mentioned):

- Turnover
- Performance indicators (in very few cases, when performance appraisal systems are in place)
- Headcount (the number of people approved by the management to be recruited – could be approximated as "approved vacancies")
- Number of training days per capita
- Training budget that needs to be spent by the end of the year
- Job descriptions and level of education reached before coming to the company.

A quick evaluation of these indicators shows that they are based on quantitative measures, which say very little about *why* people are not motivated. In SD terms, the companies are treating the lack of motivation as an exogenous influence that is not affected by conditions internal to the companies. Perhaps, then, they are measuring the wrong indicators, and adopting the wrong policies in response to those measured.

We suspect that the current Romanian HR policies are inefficient because of the misperception of employee work related attitudes when designing policies addressing retention. Literature (Sterman, 2004; Moxnes, 2004) shows that people stop searching when they have found one possible cause for the behaviour they observe, and that they misperceive even the simplest dynamic systems. The policy makers' focus is on the easy-to-measure data, like turnover and number of employees, thus misperceiving "soft" variables like the work attitudes. The intention to quit, job satisfaction and organizational commitment are three key employee attitudes that influence the turnover. (Ostroff et al, 2003; O'Reilly, Chatman, & Caldwell, 1991; Carmeli, 2005). Commitment should be built by improving these attitudes.

Stock and flow diagrams

The problem we are modelling is the retention of valuable employees. The key stock here is the stock of employees. It seems, from the analysis of current policies, that the policy makers are concentrating more on the inflow of employees, as a means to maintain their stock of employees, and they are ignoring the causes for their employees quitting.

FOCUS HERE

little focus here

Employees

Hire rate

Quit rate
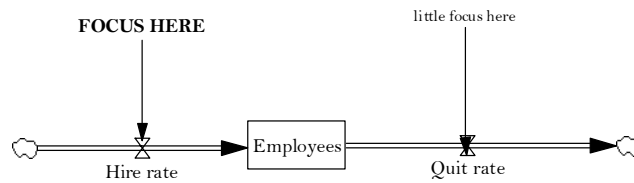
This is not a new problem. Warren (2002) showed the same pattern for other types of companies, which tend to focus more on the acquisition of new customers and do not have specific policies to address their churn. Sterman (1989a) found that subjects bias their decisions in the direction of what follows from static mental models, ignoring or adjusting insufficiently for the dynamic aspects of their tasks (misperceptions of feedback and stocks). Misperception of the simplest dynamics is an issue that has drawn much attention recently (see, for example the work of Moxnes, 2000, 2004). How can such a simple structure create misperception that has serious cost implications? To answer this question, let's look in more detail into the decision making process in our company.

The decision to hire employees comes from a gap between a desired level of employees and the current level. In other words, when employees leave, the company initiates a recruitment process to replace them. Similarly, if the business is growing and the number of employees is not sufficient, the company will hire more.

Time to hire employees

Employees

Hire rate

Quit rate

+

Desired level of employees
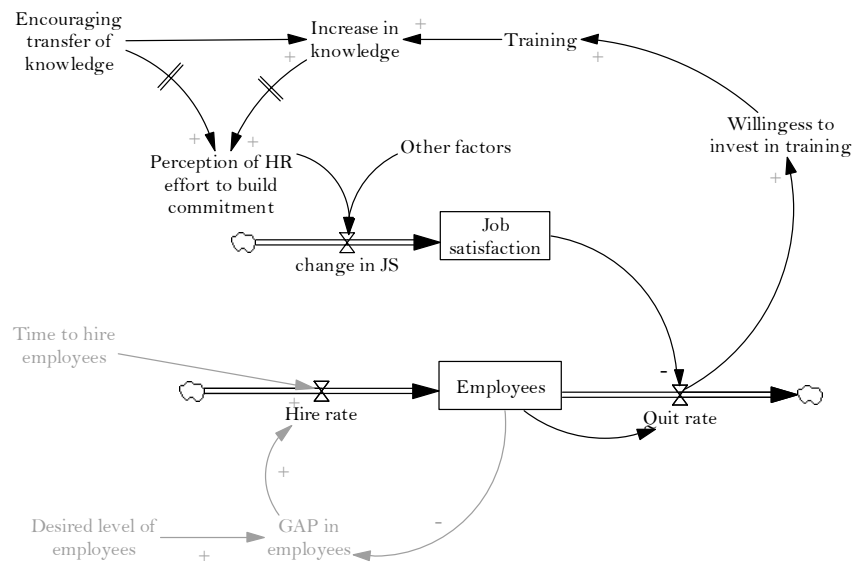
GAP in employees

+
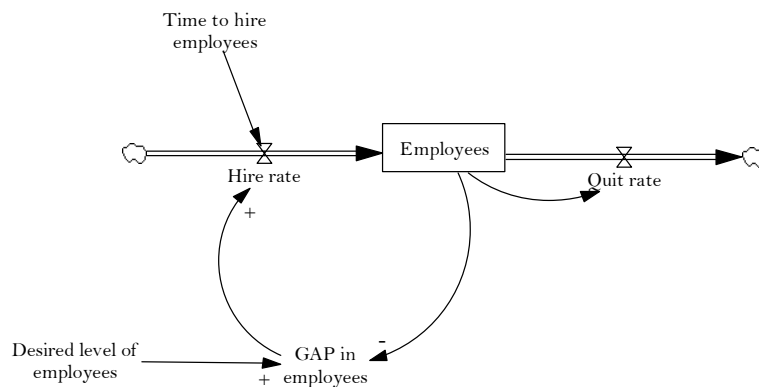
The focus is on hiring and the little focus on quitting is reflected in an ineffective policy to prevent it. In order to address the turnover, the company uses another policy it believes

increases the job satisfaction (or as the subjects in our field study call it, "motivation")[1]. Thus, in the mental model of policy makers, one important determinant of job satisfaction is the training, or more specifically, the fact the company shows the employees that it cares for them by giving them training.
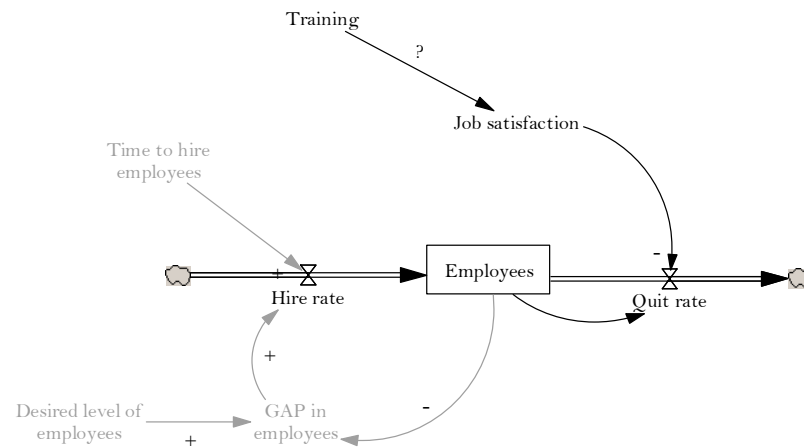
As shown before, training is not a motivation tool. Training does, in the end, have an influence on job satisfaction, but the delay is very long and the relationship is not direct. There is no direct causal relationship between the two. Moreover, in order that the trainees perceive that the company is making an effort to build commitment and decrease turnover, there needs to be consistent and continuous effort to transfer the knowledge to the work place. Other factors contribute also to the building of job satisfaction, among which career opportunities and distributive justice.

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[1] Although motivation and job satisfaction are not entirely the same concept (motivation describes the drive to work, and is more an energetic concept), the subjects we interviewed did not seem to make the difference between them, using the two terms interchangeably.

Encouraging transfer of knowledge

Increase in knowledge

+

Training

+

+

+

+

Willingess to invest in training

Perception of HR effort to build commitment

Other factors

+

Job satisfaction

change in JS

+

Time to hire employees

Employees

−

Hire rate

Quit rate

+

+

Desired level of employees

GAP in employees

+

−

We will back our claims about the influence and determinants of job satisfaction using psychology literature.

Job Satisfaction (JS)

Definition

Job satisfaction has been the most commonly studied variable in organizational research (Spector, 1997) and it has not lacked controversy. The most widely accepted definition of job satisfaction among scientists is given by Locke (1976, p. 1300): "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences". By the time Locke wrote this definition, 30 years ago (!), he had identified more than 3300 studies on this subject.

Determinants of JS

According to the Price Mueller revised model of job satisfaction (Agho, Price, Mueller, 1993), the major predecessors of, leading to a change in, job satisfaction are the following (with the definitions given by the authors, p 1012):

- Opportunity: availability of alternative jobs in the organization's environment
- Autonomy: degree to which employees have freedom to act independently on the job
- Distributive justice: degree to which rewards and punishments are related to   performance inputs
- Internal labour market: extent to which the organization job structure is characterized by job ladders, entry limited to the bottom and upward mobility which is accompanied by a progressive development of skill and knowledge
- Integration: extent to which employees have close friends in their immediate work unit
- Pay: money and its equivalent received by employees for their services
- Routinization: degree to which a job is repetitive
- Work motivation: belief in the centrality of the work role in one's life
- Personality factors

The two factors which we will model explicitly are the <u>distributive justice</u> and the <u>career opportunity</u>, as encompassing both the concept of opportunity and the internal market as expressed by Agho, Price and Mueller (1993). We will describe them in detail later in this chapter.

The extent to which satisfaction might be determined by relatively stable personality variables, such as negative affectivity and positive affectivity (in the above model referred to as "personality factors") is one of the things largely accounted for in the literature (Staw & Ross, 1985; Staw et al, 1986; Watson & Clark, 1984; Brief et al., 1988; Agho, Mueller & Price, 1993). Although we recognize that this research is important and that it is an important predictor for job satisfaction, we have to relate to our client: our problem description addresses the actions of managers in order to retain their employees. As Sterman (2000) shows, we should model the things that the decision makers cannot change through policies, so we will no go into detail about personality.

Although measuring job satisfaction may seem like a big challenge, there are several ways to do it. One of the most popular instruments is the Minnesota Satisfaction Questionnaire (MSQ), measuring more than 20 facets of job satisfaction. Other measures are the Job Satisfaction Survey (JSS), Job Satisfaction Inventory (JSI), etc. The most typical measure of job satisfaction found in an organization is the so called "employee opinion survey"(EOS), that measures the overall satisfaction with several aspects of the firm. Although this is far from a standardized instrument, it is a first step in measuring attitudes. An example of the type of questions asked in such a EOS is given in the following (Connoly & Connoly, 2005)

1. My job makes good use of my skills and abilities.
2. I receive the training I need to do my job.
3. I am given opportunities to improve my skills in this organization.
4. My job is challenging and interesting.
5. I am doing something I consider satisfying and worthwhile in my job.
6. My job offers me the opportunity to gain work experience in challenging new areas.
7. I like my job at this organization.
8. I understand the link between what I do and the organization's objectives.
9. The work I do is very important to the success of my organization.
10. I am doing something I consider really worthwhile.
11. I really feel I accomplish something each day.
12. I have personal control over the way my work must be done.
13. I feel the amount of work required of me is about right.

Each of the items is a statement that is either favourable or unfavourable about an aspect of the job. Respondents are asked to choose a number, typically from 1 (totally disagree) to 6 (totally agree), that corresponds to their agreement or disagreement about each item. We use a similar scale to measure job satisfaction in our model.

As we do not have a standardized unit of measure for job satisfaction, we modelled it as a capability and put a unit of measure called "job satisfaction unit". The range of variation is from 1, indicating a low job satisfaction to 10, which shows a high job satisfaction. Especially important here is the *delay* with which this attitude is forming, set to 12 months. We consider the job satisfaction to be similar to an information delay, because it is similar to the "perception of" a variable, formed in time. According to Azjen (2001), although people can form many different beliefs about an object, it is assumed that only beliefs that are

readily accessible in memory influence attitude at any given moment. "Readily accessible" suggests that the weight on recent events is higher than on past events. It implies that if the company has adopted a set of HRD policies it cannot expect their effect to last forever, but must constantly make sure that they are reinforced and acted upon accordingly, hence the long delay chosen.
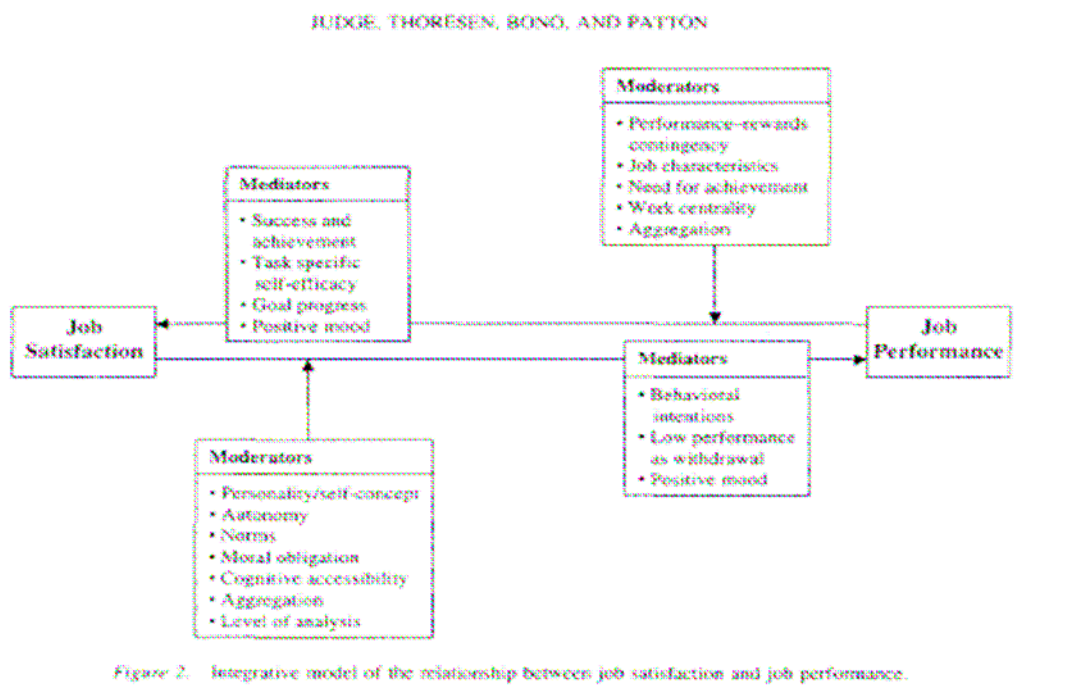
Relationship job satisfaction - turnover

The job satisfaction is widely cited in the literature as a determinant of turnover (Lichenstein, 1998) and thus has a crucial influence in retention. We expect that policies addressing job satisfaction will also influence the turnover. One of the models of organizational turnover (Price & Mueller, 1986) has job satisfaction embedded as the first mediating variable in a system of causal linkages that produce turnover. Job satisfaction has been identified as the single most important reason why nurses leave their jobs (Lum et al, 1998). Some authors (Price & Mueller, 1981) say that the effect of job satisfaction on turnover is not direct, but mediated through the intention to leave. Hulin et al (1985), consistent with Fishbein and Azjen's work (1975) work on formation of attitudes, says that the availability of alternative job opportunities affects satisfaction, which in turn, influences behavioural intentions to quit and, through these intentions, quitting.

The process of social comparison (Festinger, 1954) constitutes a major determinant of job satisfaction, because the process of satisfaction results from the distance between two perceptions concerning aspects of the job which an individual values (Igalens & Roussel, 1998). In other words, the employee makes a mental calculus between what he/she thinks that the job satisfaction should be, and what it is at a particular point in time. We chose to model this influence on turnover as the difference between the maximum value of job satisfaction and the current value: the bigger the difference, the higher the intention to leave, so the higher the probability of turnover. There are of course other reasons why employees quit, that are not related to job dissatisfaction, like family relocation, acceptance into higher education, etc., factors that the employer cannot control, so we chose not to include them in our boundary.

In a qualitative and quantitative meta-analysis of the literature on the relationship between job satisfaction and job performance (Judge, Thoresen, Bono & Patton, 2001), the authors investigated 7 models and looked over 312 samples with a combined N of 54,417. Their research indicates that the overall mean true correlation between the job satisfaction and performance was 0.30. This study shows that there are other determinants important to job performance that account for 0.7 of the job performance that are mostly related to the organizational culture and individual determinants. The authors describe a series of mediators and moderators that affect the relation between the two concepts, among them norms, autonomy, personality, intentions performance rewards system, etc. This shows that the very things involved in determining the job satisfaction not only influence it, but then later affect the way this relates to the job performance and productivity. The following scheme summarizes their findings:

Figure 2. Integrative model of the relationship between job satisfaction and job performance.

Even in a very recent study of this much controversial relationship between job performance and satisfaction (Schleicher, Watt & Greguras, 2004), the authors took no position on the causality of the job satisfaction – performance relationship (i.e., does satisfaction cause performance or does performance cause satisfaction?), but merely investigated its conceptualization regarding and affective-cognitive consistency. As Judge et al. (2001)

suggested, a truly integrative model would posit reciprocal relationships between job satisfaction and performance, suggesting a feedback structure.

Brief (1998) pertains that all the evidence in the literature shows that performance is NOT linked causally to job satisfaction, but that all have studied this on the individual level. He notes further on (p 43) that

"Organizations with more satisfied workers perform better than organizations whose workers are less satisfied. [...] the tricky part of the proposition is the meaning of *organizational performance*, for which there is lack of consensus in the literature"

There is a difference between the evaluation of overall job performance and a task-level assessment of job satisfaction, that yields different, though related, results (Taber & Alliger, 1995): global and facet measures were found to be consistent with, but only partly predictable from, individual task properties. Thus a study of the organizational level of job satisfaction would be very useful in clearing up this issue and we intend to model just that.

As shown by Brief (1998), there is a negative relation between job satisfaction and the turnover intention, that leads to the turnover behaviour. The relation is weaker, however, than the relation between job satisfaction and other so called "withdrawal behaviours" (frequent interruptions, absenteeism, lateness to work, wasting time while on duty, etc.). Hulin (1991) argues that this relation is stronger because the individuals cannot always afford to leave, so they develop what he calls "adaptive" behaviours, that influence drastically the productivity. These behaviours are bad for the organization, but seldom result in layoff - which would be bad for the employee. This is especially relevant in the Romanian society, still under the influence of communist times, where the norm was that the employee was paid anyway, no matter how much effort he put into his work. We can interpret this as an influence on the productivity of the employee: if he cannot afford to leave, he will be less productive if his satisfaction is low.

What is very clear about job satisfaction (Brief, 1998) is that it is a result of *interpretations* of job circumstances (e.g. *perceived* adequacy, fairness of pay, internal job market, etc.) As Rice et al (1989) show, the "have-want" discrepancies have the power to predict and explain job satisfaction very well.
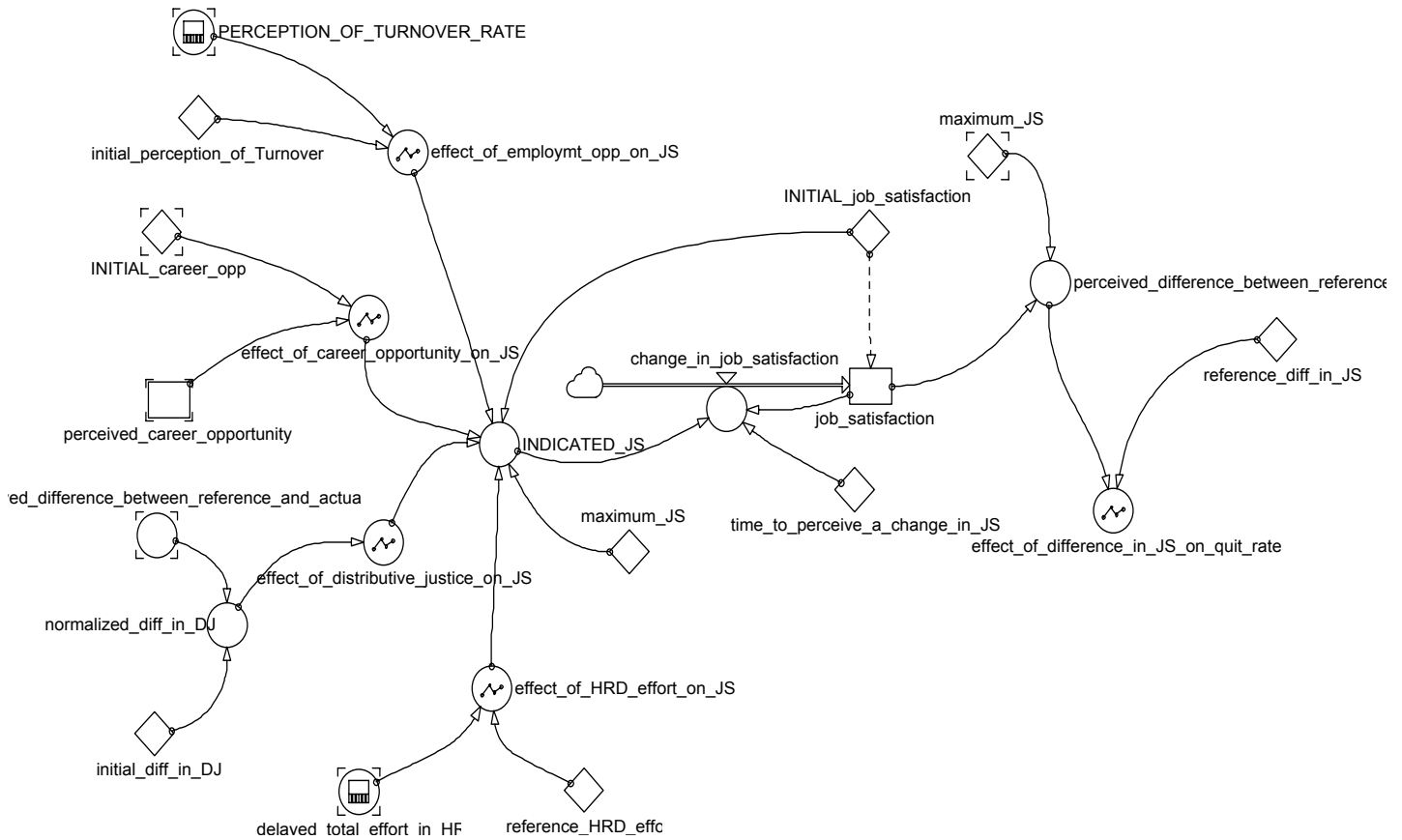
Modelling job satisfaction

We attempted to model job satisfaction astarting from the Agho, Price & Mueller (1993) model.

The factors influencing job satisfaction that we have chosen to model are the distributive justice, the career opportunity, the quality of the employee, and the job opportunities on the market. We define quality as the capital brought in by the employees in the form of knowledge, skills and abilities (well known as K.S.A. in the personnel psychology). The job opportunities on the market are reflected by the perception of the turnover rate, because we assume that the employees would not leave unless they have an alternative job offer on the market (the author's experience shows that this is the case for the specialists: if they are dissatisfied, they start looking for a job and only after having found one they leave). Autonomy was excluded from the model because it does not represent a decisive feature in the Romanian workplace (Gallup study, 2005). The effects of 'integration' and 'job mix/routinization' result from investment in HRD (job diversification and investment in team building), so we addressed them in the 'Quality' variable.

Pay is an important part in the Price Mueller model. In our model, we consider that pay influences turnover in two ways:

- One is the comparison with the external market, and that is reflected in the distributive justice variable, that is a determinant of job satisfaction.
- The other is when people evaluate if they get enough pay for the effort they have put in; this issue is addressed in the distributive justice variable.

The change in job satisfaction is tracked by a series of effects to an initial value of 3 what we called "JS units" meaning Job Satisfaction units. As argued before, JS implies an evaluation process. Thus, the important variable here is not the actual job satisfaction, but rather the difference between what is expected, the maximum job satisfaction possible, and what the employees feel. An alternative way of modelling it would have been with floating goals, but we chose the simpler modelling version.

As the difference in job satisfaction increases, meaning there is more discrepancy between the actual and the desired job satisfaction, the effect on turnover is larger. We believe this function describes the job satisfaction evaluation, with a slow adaptation when the situation is good, and the discrepancy is low, and a sharp increase when the discrepancy is high. This function relates with the process of adaptation described by Sterman (2000, p436), in which people adapt faster to higher income than they adapt to a drop in their income.
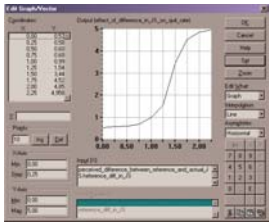
Effect of difference in job satisfaction on quit rate

Summary

This paper tries to analyze some of the HR policies that are used in Romania today and the reasons behind their inefficiency. We show the focus on hiring and not on retention policies, and the misuse of training to increase motivation. The paper is also an attempt to include soft variables like job satisfaction in policy making and a first attempt to explicitly model job satisfaction and its influence on turnover. Although we recognize this is far from being a thoroughly validated modelling attempt, we believe it is an important first step towards bringing psychology concepts like attitudes closer to system dynamics modelling.

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