Business … the key: MOTIVATION
The System Dynamics Contribution

Introduction

It is well known that the most important thing that a company or organization has are the human resources. This is not something new, neither the assets, the technology, the contacts, the position or the prestige are enough compared to human beings.

What we understand by human resources is intelligence, knowledge base, study skills, and time management skills: basically social skills and intellectual capital. All organizations and companies have these kinds of resources, therefore, the question is, how can organizations change in order to make a difference between each other?

Managing change is seen as a key leadership function at many businesses. How you introduce changes that impact on the whole organization and the people who work in it is not easy. There are a number of issues related to the process, but the vital one radices on **Motivating Staff**. Because neither the reorganization of the operations, changing the corporate culture, changing the decision making structure of the organization, or qualifying communication will work, if people is not motivated.

The Key: Motivation

To begin with, to appreciate the importance of motivation, Peter Senge [1](1), adds some words regarding this: "We tend to think that, in a traditional organization, people are producing results because management wants results, but the essence of a high-quality organization is people producing results because they want the results. It's puzzling that we find that hard to understand, that if people are really enjoying their work, they'll innovate, they'll take risks, they'll have trust with one another because they really are committed to what they're doing and it's fun."

So, to understand motivation, we should analyse human nature itself. We have to comprehend the idea that all people are different, therefore, all people cannot be motivated in the same way.

In order to be able to find an answer to how to motivate people, we can classify people into groups. In this way the problem is reduced to a smaller one: the analysis of subgroups and not the total. There are plenty of books written about this subject, but I would like to introduce James L Gibson's studies. In his book "Organizations: Behaviour, Structure, Processes"[2](2), he presents Mc. Leland's theory. This theory states that many needs have their origins in the culture of a society. Four of these needs are achievement, belonging, competition and power. On one side, achievement impulses people because of the challenge of doing things and achieve a goal. Belonging, because they are motivated just for the reason that they belong to a group and in this way helps to effectively build relations with others. Competition causes success and therefore shows peoples' abilities. Finally, power gives people the authority to make decisions and to have people fulfil them.

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[1] (1) See Peter Senge´s CV at the end (References).
[2] (2) See more about this book at the end (References).

When one of these needs becomes intense it motivates the person to seek the way in which it may be satisfied and behave in this manner.

Consequently, we could take a particular feature from these four groups, and of all the groups we could imagine, the fact is that they all radix on Security. And here is the key to *managing change*. People, as simple as it sounds, need to feel secure in their country, in their society and at work. And secure at work means to share the vision and the mission of the organization, to have a reasonable salary, to have their tools for work, to feel comfortable with their partners, well, we could mention plenty of examples, but it is only with security that people can be motivated.

Then, if we have the answer, how do we put into practice? Before this, as it is quite complex, we will introduce the concept of **System Dynamics**, and realize that motivation is not as easy as dividing the problems into minor ones.

Introducing System Dynamics

"Identify areas you aren't looking at, and then generate a way to measure how important they are. There are always feedback effects that aren't being considered". What is John Sterman [3](3) trying to say? Basically, System Dynamics. In its simplest sense, SD focuses on the flow of feedback (information that is transmitted and returned) that occurs throughout the parts of a system and the system's behaviours that result from those flows.

System Dynamics studies how we are all set, positioned and distributed in more complex systems. In particular, our decisions have multiple effects, all those so-called "side-effects", that we are not aware of because they're in the outside boundary of our model. Sterman clarifies this idea of side effects: "There's really no such thing as a side effect, there's just effects."

It is very common to see that Companies tend to blame unanticipated side effects when something goes wrong instead of looking at their policies and finding the problem there. Policy resistance occurs when the managers of an organization face a current challenge, apply what they believe is the best solution, and yet the problem still is not solved or a new problem is created.

Motivation and System Dynamics

Now that we have been introduced to System Dynamics, we are ready to approach the complexity of motivation, which has an absence of empirically proven measurement tools to analyse the enormous number of variables that affects it. With the implementation of SD we can design robust information feedback structures and control policies that can then be designed through simulation.

There are two main stages in a System Dynamics approach. They are the qualitative and the quantitative stages. The research for information makes use of the qualitative stage. In the qualitative stage of SD, influence diagrams are used. Influence diagrams show how the variables such as "continuous evaluation" and "threat of job loss" influence each other, setting a good platform for the quantitative analysis.

One aspect that all managed systems have in common is the presence of feedback loops. These are closed sequences of cause and effect or action and information. There are

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[3] See John Sterman´s CV at the end (References).

two types of feedback loops, goal seeking and growth seeking. Influence diagrams allow these feedback loops to be identified. Not only can the different types of feedback loops be clearly presented, but also other aspects of the system, such as delays, can be clearly presented and understood in influence diagrams.

A very simple model for the "Person A", shows how motivation is influenced by some variable like: Partners, Share Mission and Vision, Salary, Comfortable Environment and the Relation with its boss.
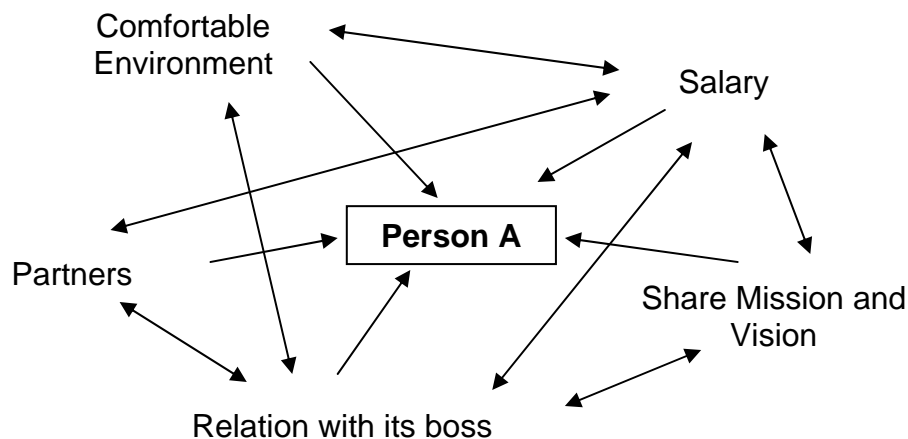
This is a scheme that demonstrates how System Dynamics begins its work. It is not easy to deal with psychological and physical variables together. There are so many things to take into account, that any model could be an approximation to the real one. Even more, we will never find the exact model for any natural action.

Peter Senge [4](1), gives us another point of view on this dilemma: "All human actions arise in the midst of a continuous interaction of interpreting, acting, and influencing conditions, which then give rise to new interpretations and actions. But these interpretations are also shaped by mental models, habits of thought and action, which themselves are embedded in feedback loops influenced by current actions and conditions. System dynamics and structuring naturally complement one another. Just as structuring addresses the blind spot in system dynamics around how structures come into being, so does system dynamics address the blind spot in the structuring view about how different structures have different dynamic consequences, that is give rise to different patterns of behaviour over time".

Conclusion

A person's productivity is equivalent to its motivation. People who work in a team are most productive if they inspire and support each other. When well-motivated people work on a complex problem, they will automatically look for structure and in bigger projects they will plan a faced implementation.

System Dynamics is a very powerful tool to understand our increasingly troubled world. It offers a way of thinking, doing, and being that can help the planet's citizenry to achieve a much saner day-to-day existence, as well as a more promising longer-term future.

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[4] (1) See Peter Senge´s CV at the end (References).

Thus, If we understand motivation's importance in an organization, and how can System Dynamics contribute for simulation and optimisation, then we can appreciate how SD deals with the time-dependent behaviour of managed systems that affects Motivation, with the aim of describing the system and understanding how information feedback governs its behaviour.

Finally, people need to achieve high performance and the complexity of motivation. But beyond the studies and results, we have to be conscious that the need to achieve must come from within the individual.

References

(1)
Peter Senge
Peter Senge graduated in engineering from Stanford and then went on to undertake a masters on social systems modeling at MIT (Massachusetts Institute of Technology) before completing his PhD on Management. Said to be a rather unassuming man, he is a senior lecturer at the Massachusetts Institute of Technology. He is also founding chair of the Society for Organizational Learning (SoL). His current areas of special interest focus on decentralizing the role of leadership in organizations so as to enhance the capacity of all people to work productively toward common goals.
His areas of special interest are said to focus on decentralizing the role of leadership in organizations so as to enhance the capacity of all people to work productively toward common goals. One aspect of this is Senge's involvement in the Society for Organizational Learning (SoL), a Cambridge-based, non-profit membership organization. Peter Senge is its chair and co-founder. SoL is part of a 'global community of corporations, researchers, and consultants' dedicated to discovering, integrating, and implementing 'theories and practices for the interdependent development of people and their institutions'. Aside from writing The Fifth Discipline: The Art and Practice of The Learning Organization (1990), Peter Senge has also co-authored a number of other books linked to the themes first developed in The Fifth Discipline. These include The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organization (1994); The Dance of Change: The Challenges to Sustaining Momentum in Learning Organizations (1999) and Schools That Learn (2000).

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Organizations: Behavior, Structure, Processes
by James L Gibson.John M. Ivancevich and James H. Donnelly.Jr.
The book covers: individual behavior; motivation; rewards; culture; globalization; group and team behavior; intergroup behavior, negotiation, and team-building; power and politics; leadership; organization structure; job design; designing organizations; communication; decision making; organizational change; and organizational development. Also provides other sources of knowledge for further learning.

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John Sterman
John D Sterman is the Jay W Forrester Professor of Management at the MIT Sloan School of Management and Director of MIT's System Dynamics Group. His research includes systems thinking and organizational learning, computer simulation of corporate strategy, and the theory of nonlinear dynamics. Author of many scholarly and popular articles on the challenges and opportunities facing organizations today, including the book Modeling for Organizational Learning, and the award-winning textbook Business Dynamics, he has presented his work before corporate, financial, and government audiences worldwide.
Prof Sterman's research centres on improving managerial decision making in complex systems. He has pioneered the development of "management flight simulators" of corporate and economic systems. These flight simulators are now used by corporations and universities around the world. His recent research ranges from the dynamics of organizational change and the implementation of sustainable improvement programs to experimental studies assessing public understanding of global climate change.
Prof Sterman has twice been awarded the Jay W Forrester Prize for the best published work in system dynamics, won the 2001 Accenture Award for the best paper of the year published in the California Management Review (with Nelson Repenning), has five times won awards for teaching excellence from the students of the Sloan School, and was named one of the Sloan School's "Outstanding Faculty" by the 2001 Business Week Guide to the Best Business Schools. He has been featured on public television's News Hour, National Public Radio's Marketplace, CBC television, Fortune, the Financial Times, Business Week, and many other newspapers and journals for his research work and innovative use of interactive simulations in management education and organizational problem solving.