BEHAVIORAL BREAKTHROUGH IN SUPPLY CHAIN OPTIMIZATION PROCESSES

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Abstract: *This paper is concerned about behavioral breakthrough thinking process of any optimization program. This applies to any kind of manufacturing or service organization, that is trying to change the internal or external processes. The transition phase during the change brings many pitfalls with it. This article tries to name six of the main barriers that can lead an optimization program, soft computing solutions incorporated, to a bad end. The main goal of this paper is to grasp the basic ideas that are behind these barriers.*

Key words: *Management, Optimization, Behavior-based improvement, Supply chain, SixSigma, Lean,*

Over the years, me and many of my colleagues in Lean and SixSigma sphere have learned, many times the hard way, that it takes much more to translate the principles of behavior-based optimization into effective and long-term improvement. In this article I propose six common barriers that can limit your chances of success in process optimization. These areas are universal in human nature, and are applicable therefore not only in Supply chain, but also when implementing any type of optimization program in the workplace, especially based on Soft computing optimization solutions.
What does it really takes to translate the principles of behavior-based improvement into effective action plans and long-term improvement?

First barrier: **Principles not communicated or teached properly**

Many times when we come to the praxis of production or service organizations, we discover that many people are automatically set for negative outcome of the initiative. This is prejudice of so called another temporary fix or "flavor of the month". This attitude of audience is based upon tens, if not hundreds of "movements" that where started in past 30 years with dissapointing outcomes. Even the Operations Research by it self was revived in 80s and 90s from ashes of management history, because its applications couldn't cope with the hardware and software solutions of the 70s and with the hype, that was created by scientist of those times.
This, so called, hype is caused by bad communication and inproper teaching of main principles. When people are not taught the mission behind, they are not capable to estimate the power and the danger side of the solution. The easiest way to teach people is to show them how it works. Many solutions, especially those in Soft computing area applied in Supply chain areas, are for the managers just black boxes. When not working properly at some occasions, the managers are loosing the trust too quickly.
When people grasp the theory underlying a method, they develop their own belief system to rationalize why they should comply and continue to use these. I saw many companies equipped with the newest SAP, Oracle, and other database systems, with many tools deployed and available for analysis. Heijunka scheduling, Kanban solutions and many others incorporated. I can say, that most of the people in supply chain departments weren't using these, not because they were too complicated, but because they didn't understand these solutions properly, and were scared with what if situations.

Second barrier: **Too few improvement leaders**

Leaders of the change are needed throughout the whole organization. We are talking especially about the direct workforce level that is incorporated with the solution. This is necessary for the process to be sustained and supported over the long-time period. When key individuals (do we really understand who is a key individual when selecting training participants, delegating responsibilities and empowerment,

establishing communication links, etc.) believe deeply in the principles and procedures being implemented they go and do the "walk to talk" tours for us (internal free of charge PR) and make sure the program continues.

To develop these people we must take into consideration some basic rules of engagement:
They need to know the principles and procedures;
They need to know how to relay the information to others on all levels of the organization;
They need to know the thinking process behind the solution and they need to be able to teach it to others;
They need to have the opportunity to teach their colleagues and co-workers;
They need to have the chance and opportunities to lead the changes;
They need to understand the principle - Learning by teaching, learning by doing;

Teaching by itself develops internal mental processes that enhances the communication with the creator of the optimization and enables further development and improvement.

Third barrier: **Ownership distribution**

So called optimization solutions are mostly developed with great deal of external resources. After the implementation phase most companies underestimate the Control phase. In the early years of optimization. Even Mr. Deming was teaching that the Control phase is very critical for success. To be more precise the Check and Act phases are meant as the Control phase. The SixSigma movement incorporated this phase directly into the DMAIC cycle, that is the younger brother of PDCA (DMAIC – Define, Measure, Analyze, Improve, Control / PDCA – Plan, Do, Check, Act).
Still the control phase of implementation is still the weakest point of any optimization project. This is due the lack of ownership transfer. When people don't feel no personal ownership of the optimization effort they will not struggle to fight for the solution on daily basis. This is necessary for its survival. Many times I saw that this lack of ownership transfer was caused only and only by simple cause and that's, not to be incorporated in the process of development of ownership structures. People and managers especially need to give the program its own label. Only after than we can expect from them, that they will work to keep it relevant and evergreen.

Fourth barrier: **Insufficient direct workforce involvement**

It's obvious to most of us that optimization is not the sole job of the plant optimization leader (Sixsigma Master Black Belt, LeanSixsigma leader, etc.), but a shared responsibility among all employees. After all, the direct workers are true experts of the optimized process, with the biggest know how of the implemented processes and actual state of the solution. They know where daily problems lie, and how to avoid them. They also know who takes risks for bad outcomes and how to avoid them. When not incorporated in the solution proposition, design, testing and implementation properly, most of the solutions, even those great ones, will be lost or not used properly. Each of the six points in this article relates to engaging employees in the process.

Fifth barrier: **Struggling top-down support**

Some amount of management support is implied and necessary. What is the right amount is a question by it self. Just from my personal experience, the management needs to talk about their own understanding and belief in the principles, they want to implement. When not, the overall acceptance will not be reached.
For the optimization process, this can be seen as internal PR action. This time the customer is the real user – the direct workforce.
This PR must not be done by external resources solely. It needs to be shown that the management truly believes the solution and is fully aware, and understands the outcomes. This point is very connected with the first barrier.
Recognition of individuals and work teams for accomplishing objectives is also critical in top-down support. Sometimes so called VIP syndrome arises, that only the chosen ones are beneficiary. This needs to be overcome. We should be really aware that at some point there are really no very important persons in

our facilities. At some stage, everyone is replaceable. At the other hand, there are many “VIPs” – Very important processes, that need to be taken care off.

Sixth barrier: **Goals vs. Purpose**

There is a huge difference between a purpose and a goal. Purpose reflects the overall mission. Goal defines a specific outcome targeted with a particular activity or process. Even during the process of creating of the optimization agenda this can lead to a bad solution construct.
Many times we discover solutions that are anticipating more pressure to fulfill the outcome numbers - KPIs- than to achieve higher program participation and impact.
Numbers can be readily manipulated to "look good". Even the ideal optimization outcome from a software solution can be neglected, or averaged to see bad or good according to the current situation. Not to mention that employees often hide evidence, perhaps to win a reward in the bonus system for KPIs. KPIs thinking, is very often managers thinking, may actually encourage such “cheating” to influence the numbers on which their bonuses depend.
Once employees discover attempts to “change” the numbers, they no longer trust the system, nor believe that this is the path the management truly wants to go. The solution is very quickly abandoned and used just another justification for a bonus payment.
In fact, the ability to objectively and continuously measure program impact is a special strength that needs to be developed by employees during the implementation phase. Everyone can look good in these days thanks to plastic surgery. On the other hand, only few perform very good, when smiling all the day with their plastic lips.

There is plenty of hard work and optimization efforts do to out there. The pain is an inseparable part of it. Without pain, there is nothing that could generate a real natural and deep need for change of the state. Without the need for change, there is only a grey, not very good defined, “something” that should happen “sometimes”. We need to remember this when trying to change things. Especially by sophisticated software solutions in complex supply chain environments the outcome of the initiative lies not in the greatness of the software, but in the approach of people.

When employees see, that they are making progress toward reaching the goals, it boosts their belief that they can make a difference. To make a difference is all what we need to do, when moving from one point (current state) to another (future state).

The six barriers are very important factors that determine if teaching the principles and procedures will lead to long-term and large-scale success of any optimization program. The article opens many questions and areas for further research, especially in fields as behavioral breakthrough thinking and leadership, process of optimization implementation and others.

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