

SALES MEASURES DO NOT FIT ALL...A LITTLE BIT OF EVERYTHING

Laura KHACHAN
ISEOR Research Center &
Université Jean Moulin
(France)
University of Balamand
(Lebanon)

Maité RATEAU
ISEOR Research Center
(France)

Laurent CAPPELLETTI
CNAM University of Paris & ISEOR
(France)

ABSTRACT

Going from our motivational background as internal intervener, we highlight the problem of performance indicators adapted in the pharmaceutical industry to measure the performance of Medical Representatives (Med Reps). We review the Balanced Scorecard and the management control performance logic. In our research, we use the socio-economic intervention to help us get rid of traditional performance measures. Our intervention research cracks the code of the prescription drug cycle in the aim of providing a better understanding of the performance measures that should be adopted to deliver a holistic view of performance.

We detect dysfunctions in the cycle of transformation called Prescription Drug Cycle PDC and we come up with baskets of solutions. We conduct socio-economic projects to reduce dysfunctions in the PDC and simultaneously add value to the performance measurement system and performance indicators locally and globally. The indicators entail the extrinsic and intrinsic motivators, the short- and long-term results, the behavior and the outcomes of performance at the local and global levels of the organization.

Keywords: Med Reps, Prescription Drug Cycle PDC, Socio-Economic Intervention-Research, Performance Measurement, Pharmaceutical Marketing

1 - INTRODUCTION: SALES MEASURES DO NOT FIT ALL... A TRUE STORY

“We do not sell, we inform! I don’t know how they evaluate our performance based on sales figures alone. I think it is so unfair and does not tell enough about our real efforts and high-quality calls when convincing the physicians about prescribing our drug. Several factors come into play and affect either the prescribing behavior of the physicians or the transformation cycle of a prescribed drug into sales. Or it could be sometimes that pharmacies in my area buy the drug from another pharmacy in a different area, which does not appear in my sales! Sales measures are just unfair...” stated a Med Rep in my team.

Starting my career six years ago in the pharmaceutical industry as a Med Rep, I have accepted the fact that sales numbers define my performance. I knew I couldn’t do anything about it. Nevertheless, after being promoted three years later to a team leader, I have started to question sales numbers as the only real performance measure. This inquiry has risen because I have started to evaluate people’s performances and to take actions accordingly. I mean I have been in their shoes before, and not long time ago! I have seen people leave the company because of low sales’ achievements although they have always been qualified people with high communication and selling skills. *“I have been forced to lay off Med Reps several times in my career. So many times I wasn’t convinced, but I had to do it anyway. Sales numbers were stronger than my opinions, and hence I couldn’t affect some hard-hitting decisions of the upper management”*, expressed the Marketing Supervisor 1. *“I have had in my tea Med Reps with high sales figures in their area but who do not perform with high-quality and vice versa”*. Then I wasn’t alone to think and feel this way. Many supervisors and managers have been wondering if the financial measures were definite in cutting back people.

The people leaving are sometimes, and I say sometimes, paying the price of hidden dysfunctions and interruptions in the transformation cycle of prescriptions even when prescriptions are effectively generated. However, and due to obstacles, prescriptions fail sometimes to being converted into sales or even to being initiated in their first place. Similarly, high sales figures do not necessarily mean that the Med Rep is performing well. Other measures have to be considered for Med Reps who self-report their work in this indirect sales cycle we encourage prescriptions and hope they get transformed into sales! In addition, the resolution of dysfunctions in the PDC gives credibility to the sales figures that become more reflexive and representative of the performance. Our aim in this research is to detect dysfunctions in the prescription and transformation cycle of a drug and reduce interruptions and blind spots found there. As a result, looking for mixed performance indicators for Med Reps (Qualitative, Quantitative, and of course Financial), could help us assess performance better by reducing blind spots and preventing dysfunctions from taking over in the Prescription Drug cycle.

2 - LITERATURE REVIEW: STANDING ON THE SHOULDERS OF GIANTS

The ultimate goal of Management Control is to motivate employees and accompany them to improve their performance and reach organizational objectives (Van der Kolk, Van Veen-Dirks, & Ter Bogt, 2019).

In our intervention research, we have consulted the performance measurement as an integral system of conversion of input activities into output results in the interconnected cycle of Prescription Drugs. The socio-economic intervention research, in its holistic and stakeholder-approach, gives power to human potential to align the strategy with management control and achieve an integral quality system to better monitor sales management. Instead of using the sales measures in a *one size fits all* approach, we have been able to customize performance measures for every interaction between key players in the Prescription Drug cycle. Indicators tackled several dimensions: behaviors (input) and outcomes (results), short- and long-term, and financial and non-financial, past and future.

The **Balanced Scorecard** is key when looking at the performance measures and extracting performance indicators. Nevertheless, the BSC does not provide a complete system for management control. Neither does it provide us with a holistic detection of dysfunctions, nor does it supply managers with all the tools needed for a better management control and piloting system.

In contrast, the **Socio-economic theory** entails the individual and the collective performance simultaneously, allowing us to tailor local and global indicators of performance in the Prescription Drug cycle. It applies an integral quality system to shed light on the dysfunctions creating interruptions and hence provide all the tools needed to tailor the proper performance measures. For instance, socio-economic theory stands on three main pillars: strategic alignment, the human potential for social integrity, and management control for economic improvement on hidden costs and self-control.

a) PERFORMANCE MEASUREMENT IN THE PHARMACEUTICAL MARKETING FUNCTION

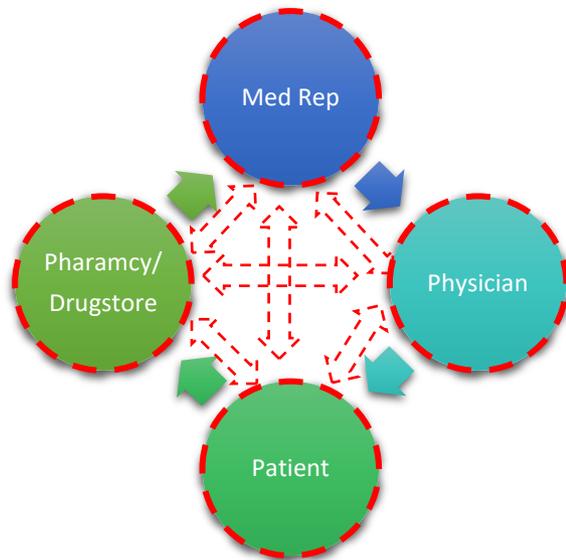
The history in marketing performance metrics shows a transition throughout the years: first, in the 1960s and early 1970s, metrics were the financial measures in terms of financial achievements (Feder, 1965; Goodman, 1970). Second, and in the 1980s, non-financial metrics started to gain popularity such as market share, but both financial and non-financial measures are within the outcome category (Buzzell & Gale, 1987). Well ahead, in the late 1980s and 1990s, new measures evaluating the input of marketing functions started to be implemented and a transition to a multi-dimensional approach has overcome the one-dimensional financial measures (Jaworski & Kohli, 1993).

Med Reps work with multiple blind spots due to interruptions at every stage in the prescription cycle. They never get a clear feedback about their work,

and therefore the need for new non-financial indicators has arisen, especially when financial results are attained with low performance of the Med Reps and the other way around, some well performing Med Reps do not reach targeted financial ratios. As a result, the need for proper indicators that give a holistic picture of the performance of Med Reps is rising in organizations that are financially driven and lack the application of other measures that alter the evaluation activity (Dambrin & Robson, 2011).

“An essential property of this chain is that it must remain reversible. The succession of stages must be traceable, allowing for travel in both directions. If the chain is interrupted at any point, it ceases to transport truth- ceases that is to produce, to construct, to trace, and to conduct it.” (Latour, 1999, p.69).

Figure 1: Dysfunctional interactions between Key Players in the PDC (Dambrin & Robson, 2011).



Most of the dysfunctions affect the work of Med Reps and hinder the required support to trace their performance. In a brief explanation, the lack of support for the Med Rep affects the call (which is the marketing dialogue with the physician or pharmacist) and reduces the quality of the negotiation. Moreover, a negative feedback from the patient about the drug availability and accessibility or about the quality of the medicine due to dysfunctions at several levels is very harmful for the Med Reps' performance since the ultimate goal of the company is to meet the end-user's needs. The figure above highlight in red Med Reps and their interactions with the other key players in the prescription cycle. The dysfunctions alter the interactions between Med Reps and the physicians, the patient, and the pharmacy respectively.

Usually a purely financial performance appraisal such as sales figures of a certain pharmaceutical products leads to many problems in the pharmaceutical sector

including employee demotivation, poor performance steering and management...., resulting in ineffective performance with lots of hidden losses. New indicators should be looked at in order to get the full picture from different angles (Bruns, 1998; Kaplan & Norton, 2004; Neely et al., 2000). The Balanced Scorecard (BSC) gives a complete look at the performance metrics by tackling the different perspectives and including all stakeholders in the process (Niven, 2003).

The main goal of the BSC is the combination of financial and non-financial metrics in one tool for a proper and complete performance measurement that evaluates previous results and reveals future potential of the company. According to Niven (2003), the BSC is considered to be a *Measurement System, a Strategic Management System, and a Communication Tool simultaneously*. Since its emergence, the heart of the BSC is still stagnant. Kaplan and Norton agreed on four perspectives that allow the organizations to have a holistic view of the performance: Finance, Customer Focus, Operations and Processes, and Learning & Development (Kaplan & Norton, 1992).

The need for non-financial measures has led, at the end of the 20th century along with start of the 21st century, to the birth of a new modern school that takes into account the human factor in the performance management (Kaplan & Norton, 2004). The evaluative function of Performance Measurement consists of assessing weaknesses of employees one by one in order to assign appropriate training needs and coaching to improve individual performance (Boswell & Boudreau, 2000). *'We measure performance to evaluate the performance of the organization inside, to evaluate the performance from outside, and to manage the performance'* (Bocci, 2004).

In this paper, we will explore now the performance measurement in organizations as well as the importance of the socio-economic theory in the generation of a new performance measurement system.

b) TRADITIONAL PERFORMANCE MEASURES & EMERGENCE OF NEW MODELS

The traditional school in performance management focuses mainly on quantitative and financial aspects of the performance with minor or even null consideration for qualitative dimensions and human behavior. This has led, at the end of the twentieth century, to the birth of a new modern school that takes into account the human factor in the performance management (Kaplan & Norton, 2004). The two researchers, Kaplan and Norton, have focused on the importance of interaction between employees and managers in the performance appraisal process. Besides the conventional economic performance indicators, new dimensions need to be taken into consideration in performance management and appraisal to cope with individual as well as organization's vision for the future. In this purpose, Kaplan and Norton created the balanced scorecard which was transformational to organizations by helping them set strategic goals and transform them into continuous activities and tasks.

The balanced scorecard integrates all levels of employees in the strategic goals set by the top management. This model promotes the alignment of the company's strategic goals with its individuals' taking into consideration a combination of

financial and non-financial measures. This way, employees become more familiar with the importance of achieving their objectives in attaining the big goals. (Kaplan & Norton, 2004). *“As you involve the team more and more in opportunities for improvement, you will not only move the middle in terms of performance, but also help them move out of the middling mindset”* (Covey, 1989).

According to the two Americans Norton and Kaplan, the BSC is a tool used to facilitate the translation of the strategic objectives of the company into measurable results (Bowhill, 2008). The BSC gives a complete look at the performance metrics by tackling the different perspectives and including all stakeholders in the process (Niven, 2003).

The main goal of the BSC is the combination of financial and non-financial metrics in one tool for a proper and complete performance measurement that evaluates previous results and reveals future potential of the company. According to Niven, the BSC is considered to be:

- 1- **Measurement System:** According to Niven, non-financial metrics are essential to add value to the performance beyond the financial metrics that are back looking and lack a futuristic view (Niven, 2003). An average of twenty-five metrics in the four perspectives would eventually affect either directly or indirectly the performance of the company, as per Kaplan and Norton. Metrics can be assigned for every dimension that line up with long-term strategic goals of the firm.
 - 2- **Strategic Management System:** The BSC can be utilized to line up the strategic goals of an organizations with its short- and long-term achievements, says Niven (2003)
 - 3- **Communication Tool:** BSC is a tool to balancing between financial and non-financial indicators of success, balancing between internal and external constituents, and balancing between lag and lead indicators of performance
- The Balanced scorecard also tackles two different types of measures as explained below: the leading and lagging measures.

Concerning non-financial measures, the balanced scorecard is special in many ways. First, it advises top managers to communicate the strategy to employees so they lighten their way towards achieving strategic goals. Second, it has a futuristic vision that uses dimensions other than the financial ones that are only back looking. Third, it combines external and internal dimensions. Fourth, it gives a concise number of dimensions for assessment that is useful for revising and taking the appropriate actions accordingly. The BSC tackles four perspectives: Financial measures, Customer focus, Innovation and Learning, and Internal Operations (Kaplan & Norton, 2004).

Since its emergence, the heart of the BSC is still stagnant. Kaplan and Norton agreed on 4 perspectives that allow organizations to have a holistic view of the performance. Some of the indicators could be internal, while others external:

- 1- **Financial:** *‘The Balanced Scorecard retains the financial perspective since financial measures are valuable in summarizing the readily measurable economic consequences of actions already taken’* (Kaplan,

1992). Traditional aspects of performance are financial and organizations need to look at their generated profits. This includes several like the turnover, the growth in the market...

- 2- **Customer focus:** As per Hepworth (1998), Cobbold and Lawrie (2002) and Bowhill (2008), customers' feedback is essential to evaluate the success or failure of the strategy implemented. When your customers are satisfied, they are loyal to your products and services, and this will be mirrored in your financial performance.
- 3- **Operations and Processes:** This perspective is related to the processes over which the business must operate. This it is the core of customer satisfaction and loyalty (Kaplan, 1992, 1996). By operating better, the satisfaction rate will increase and consequently the profits of the organization.
- 4- **Learning and Development:** Based on Kaplan and Norton point of view, learning and development is based on three pillars. These foundations are: processes, employees and information systems. For a company to sustain its improvement and growth, it must heavily invest in its employees by conducting regular training, augmenting information technology systems and lining up procedures with its strategic goals so they become congruent (Kaplan & Norton, 1992).

A high diversification of performance measures has shown a greater impact on the stock market. For instance, the use of multiple dimensions other than the old accounting measures build up for the future in a long-term and sustainable performance linked to the strategy of the company (Ittner et al., 2003).

In this paper, it is important to reveal a very crucial measure tackled by the scorecard: less or non-financial measures. These measures initiated a change in the view of management by scrutinizing qualitative dimensions like clients' connections, abilities and skills development. The balanced scorecard is futuristic and it helps in assessing the individual as well as collective skills and eagerness that will help the organization in attaining success in the future. In general, management systems do not look at the link between the different functions of the organization, but rather manage each problem alone. In opposition, the socio-economic theory along with its holistic management system looks at the organization as an integral function. The alternation between the local and global levers of performance management allows the socio-economic intervention research to synchronize the short-term and long-term results. By understanding the interactions between structures and behaviors, the socio-economic intervention research introduces change in the organizational culture and facilitates problem-solving with a closer look at the root causes. The *Integral Quality* is at the heart of linking socio-economic strategy to socio-economic performance. Integral quality of organizational socio-economic performance is the result of steering and congruence between strategy, human potential, and a management control system.

Management control has two major focal points: one on the economic and strategic level, and another on the level of human psychology and behavior (Simon, 1995). These two aspects of management control are in line with the socio-economic theory that entails the economic and social dimensions of performance (Savall, 1979).

For instance, a good fit management control system requires a course of collective, financial and tactical development (Cappelletti, 2016). In other terms, social assets can be defined as the strategic stimulation of the human potential (Cappelletti, 2010).

Moreover, Henri Savall developed the socio-economic theory in management in 1973 at the ISEOR institutional research center, in the purpose of helping the management in organizations to adopt new tools and methods. It was further developed with the assistance of Veronique Zardet and Marc Bonnet. The socio-economic theory links behavioral and social measures to the economic outcomes. It trains managers to shift their mindset to the new trend in managing their organization. The socio-economic theory is forward looking and aims at increasing the efficiency of individuals and organizations. It balances between the two extreme theories of employee development and economic achievement and combines qualitative, quantitative, and financial information (Boje & Rosile, 2003; Savall, Zardet, & Bonnet, 2008; Savall & Zardet, 2004; 2011).

The socio-economic performance is ensured by the balance between social and economic variables, and by the alternation between immediate results and the creation of potential on the medium and long run. The socio-economic theory introduces an innovative management system where the social and economic performances are interrelated and deeply embedded. Having a strategic bedrock at the organization is reflected in an internal steering between different levels of execution and in the external cooperation with external stakeholders (Savall & Zardet, 1995; 2014). The integrated strategic steering rewires the internal and external milieus. The integrated management system sets up the foundation to execute a synchronized decentralization. An improvement in the both structures and behaviors reduce dysfunctions and lower hidden costs through the projects that the intervention stimulates for implementation and monitors through the socio-economic management tools. A correction of the dysfunctional structures and behaviors leads to a sustainable economic performance and to hypertrophy the healthy interactions again.

As the figure below shows, we see the link between the Socio-Economic strategy and the Socio-Economic performance. The integral quality of the company is formed of three elements: Strategy, Human Potential, and Management Control.

Figure 2: Integral Quality (Savall & Zardet, 1987; 2008, p. 280).



To guarantee the success of a strategy, two elements of performance are indispensable: social and economic performance. The social performance is illustrated in human potential and translated into the economic performance through immediate economic results and long-term potential results. In order to reach economic results, Management Control relies on people as self-controllers and on the piloting and reduction of hidden costs. In the pharmaceutical marketing, Med Reps self-report their daily calls through the electronic system. They auto-evaluate and self-report the feedback of the physician, the possibility of gaining a prescription after the call, and the risks of being replaced by the competitors.

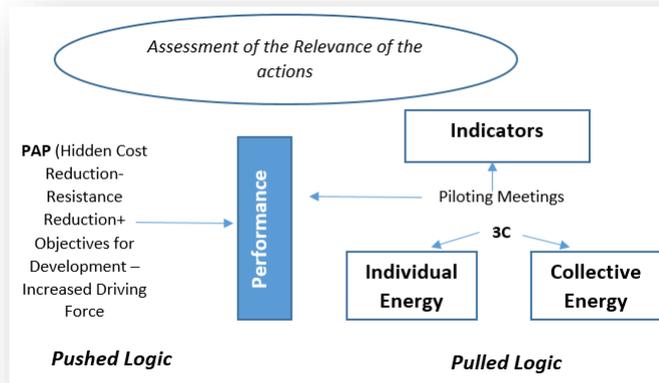
“The Med Rep could bump into the doctor in the hospital hall, report it as a call, and no one would ever know”, said the Line Supervisor 1.

We never know if the Med Rep is fake-reporting, but indicators and bad signs can be noticed in the double visits when the supervisor and manager is present with the Med Rep during the daily visits. As a result, the relation between the company and the Med Reps as internal stakeholders is built on trust. Med Reps need to be motivated and satisfied with their role in order for them to perform well and reach the desired economic results. Engagement and integrity are very essential to keep in line the performance of Med Reps with the strategic goals of the organization. As a matter of fact, and after the detection of dysfunctions in our research, we recognize the poor strategic alignment as one major obstacle in the face of reaching organizational goals and improving the global and local performance, at the level of the organization and the individuals respectively.

The **piloting** in the socio-economic theory is possible through a very important tool called the Strategic Piloting Indicator Logbook. The logic of performance is distinctive of the socio-economic theory as the figure below illustrates. This logic

allows to assess the relevance of the planned and implemented actions and their monitoring through local indicators tailored for the individuals and through global indicators for the organization as a comprehensive entity.

Figure 3: Socio-Economic Performance Logic (Savall & Zardet, 1987; 2008).



The socio-economic performance has a dual logic: the pulled and the pushed. First, the **Pushed Logic** consists of planning priority actions to reduce hidden costs and increase the driving force for the tolerance of change and the implementation of actions on both levels: individual and collective. Second, the **Pulled Logic** alternates between individual and collective actions through constant steering and communication and cooperation between the different actors. At this level, the indicators set are mandatory to apply a structured framework to trace the proper implementation of the strategic objectives and hence the success of the pragmatic actions. The evaluation of the daily activities happens in piloting meetings that aim at comparing the outcomes to the inputs and to detect discrepancies in the planned corrective and preventive actions.

Analogically speaking, the piloting of the performance of Med Reps and the different employees who contribute to flow of the prescription and the drug can follow the socio-economic performance logic. Based on the diagnosis of dysfunctions and the calculation of the hidden costs due to poor performance, actions are planned through the pushed logic and kept track of through the pulled logic.

3 - METHODOLOGY & CONTEXT

Weick (2003) labels theory as “*life understood backwards*” and practice as “*life understood forwards*”. By definition, “...*action research is a democratic and participatory orientation to knowledge creation. It brings together action and reflection, theory and practice, in the pursuit of practical solutions to issues of*

pressing concern. Action research is a pragmatic co-creation of knowledge with, not about, people” (Bradbury, 2015).

We can denote the main characteristics of Action Research as first being a participatory approach, capitalizing on democratic principles of behavior, and contributing to knowledge in social sciences and to practice in social change and organizational transformation. According to Stephen Kemmis, action research is a meta-practice that conducts modifications in the field work (2009). In order to conduct change in organizations without facing resistance from individuals, Lewin suggests that change should be planned in a three-step model: unfreeze-move-refreeze (Lewin, 1947). Action research is a research technique that generates contextualized information that are not necessarily replicable in different contexts (Savall et al., 2012). As a matter of fact, action-oriented inquiry emphasizes on the ‘particular not universal, local not general, timely not eternal -and above all-concrete not abstract’ (Toulmin & Gustavsen, 1996, p. 3).

Intervention Research (IR) is based on fundamental doctrines such as action research, decision-making, and problem-solving. IR integrates several principles for change implementation and theoretical reflection in a participatory and collaborative method (Hatchuel & Molet, 1986; Hatchuel, 1994; Ponsard, 1997; David, 1996; 1998).

Since we are searching for global and local performance indicators that are not only financial, we need to be using an overall methodology. We need to look at our object of research and understand the dysfunctional interactions and interruptions in the prescription drug cycle. Beyond that, we need to transform the object of our research and integrate the economic performance and social behavior together. In fact, it is possible to understand the functioning of a company only by penetrating to the company, intervening in its culture and practices, and hence transforming the organization (Moison, 1984; 2010).

The socio-economic intervention research is a participatory approach that adopts the **Qualimetrics** methodology in the field of research. This intervention research was conceived by the ISEOR team lead by Henri Savall in France in the early 1970s.

The socio-economic intervention research includes five major phases: negotiation, diagnosis, planning implementation, evaluation (Buono, Savall, & Cappelletti, 2018). The high level of negotiation in all the steps of the socio-economic intervention decreases the risk of conflict between the participants (Cappelletti, 2019). The socio-economic intervention research stresses on the human potential and of the importance of cooperation and equity between all participants (Buono & Savall, 2007).

The socio-economic intervention research is a “*Pragmatic Oriented Action Research*” (Cappelletti & Baker, 2010). This means that it is the type of research that is based, in the midst of the course of activity, on practical rather than theoretical considerations. The socio-economic intervention methodology has **three main characteristics**: the group work, the double-loop intervention, and the interaction between different personnel. **First**, the socio-economic intervention relies heavily on **teamwork** and collective steering which makes it a holistic approach. **Second**, the socio-economic intervention research is a **double-loop**

research bridging the gap between theory and practice and between the intervener role and the manager role of the internal intervener. **Third**, the socio-economic intervention is a highly **interactive** process (Savall & Zardet, 1987, 2008; Salmeron, 2016).

“We started as a personal association not a company. Our sales was growing very fast that at some point we felt that we couldn’t control our growth. It was like you’re rolling a wheel on an inclined plane that is getting bigger and bigger as you go. We have been successful in sales and regulatory affairs, but when it comes to management we are not. Today, we are working on structuring well our company to make it look more like a real one. The company profile is now being arranged to take its best shape. I am glad that you will contribute to this long project”, told us the CEO during our first interview. The aim of this research is to help managers extract new performance indicators that will help the performance measurement system to become more accurate and holistic, besides the sales figures. Our **Core Hypothesis** in this paper is to demonstrate that Socio-Economic Intervention Research allows a better management through the holistic system and the tools it provides. The pharmaceutical company X where the intervention research took place is a retailer for pharmaceutical products including different departments. This company has been growing at a very high pace that it reached high sales numbers in recent years that went beyond expectations. As a result, the company’s CEO has started to feel the urge of structuring an organization and give it a more professional form other than the family aspect that it has taken in its early years.

“We were growing really fast that we couldn’t control our growth”, said the CEO while telling me the story of his company as an internal intervener.

Pharmaceutical Marketing

Usually in the markets, there exist two key players: the manufacturer and the end user. Nevertheless, in the pharmaceutical industry in specific, there are **three essential intermediary parties** between the manufacturer and the patient: **the wholesalers and distributors** who promote the drug and supply it to the pharmacies, **the physician** who is the prescriber and **the pharmacist** who sells the drug and sometimes for drugs sold over-the-counter (OTC Drugs) does the diagnosis, prescribing, and substitution of drugs when possible (Schweitzer & Lu, 2018).

For drugs sold over the counter, pharmacists play an important role in diagnosing, recommending, and selling a certain drug. Pharmacists also have the power to substitute a prescribed medicine for their best-profit practice either by affecting the purchasing behavior of the patient when the prescription is not mandatory, or by shrinking the choices for the physicians (Mari & Shirley, 2007).

Pharmaceutical Marketing is a branch of marketing. It includes all the actions made for the pharmaceutical market to become concrete and the service and products to be delivered to the patients. Pharmaceutical marketing involves several activities besides drug promotion and distribution. The industry’s marketing activities and stakeholders include wholesalers, manufacturers, pharmacies whether hospital or community ones, insurance companies...and other

stakeholders that may participate in the process of pharmaceutical marketing. As a result, pharmaceutical marketing is the collection of activities that aim to secure the availability of the drug and fulfill the gap in the service that is present in the market between the end user and the provider (Smith, 2014).

Marketing of pharmaceutical products represents the impalpable services that generate the prescription from the physician to the patient (Smith, 2014). The pharmaceutical marketing process can be observed from different angles and depending on four main prospects: management, industry, function, and institution. The pharmaceutical market involves main key players who exchange in a very complex and interactive way due to several types of exchange: exchange of product, information, use rights, and payment. These key players are the pharmaceutical manufacturer, the drug wholesaler, the pharmacist, the physician, and the patient (Smith, 2014).

In the Pharmaceutical Supply Chain PSC, four characteristics of the drugs are mandatory: available, accessible, affordable, and safe (Narayana et al., 2014).

On a separate level, we can distinguish different types of sales people. For instance, the **missionary type** is the closest description to the job of a medical representative. The primary mission of the **Medical Representative** is to **transfer medical knowledge** about a certain medication and raise awareness about the disease in an ethical way. As for **Salesmen** in the pharmacy supply chain, their main job consists of **taking orders from pharmacies** and other clients such as dispensaries, drugstores, medical associations.... In general and more specifically in the pharmaceutical industry, whether order takers or missionaries, sales people's job consists of performing several functions: creating new calls every day, conveying messages to their customers and handling their objections and feedbacks, studying the market and detecting the competitors' activity, selling their customers and providing them with high quality services and products (Philip, 2002).

In our research, we are **internal intervener** occupying the role of Line Supervisor in the Drug Marketing Department. The intervention research has started with a meeting with the CEO of the company where we presented the Socio-Economic Intervention Research methodology and **took his consent** to proceed with the intervention as per the Horivert process and following the three axes of change. After the formation of the **Steering Committee** of five members based on the choices of the CEO, the diagnosis followed the **Horivert** process. At the horizontal level, and on a period of two months, we have conducted the interviews with **Cluster A** including the CEO and the nine managers from all different departments of the company. The interviews were semi-structured of one hour length each and hence we have been taking notes for the statements of all interviewed head of departments. After data collection, we have categorized the witness statements following the socio-economic six themes of dysfunctions: Working Conditions, Work Organization, Time Management, Communication-Cooperation-Coordination, Integrated Training, and Strategic Implementation. *"I think sales and marketing teams should support each other more and therefore we should have a plan for that"*, said the CEO in his first interview. At the vertical level, two clusters have been included on the diagnosis: B1 and B2. **Cluster B1**

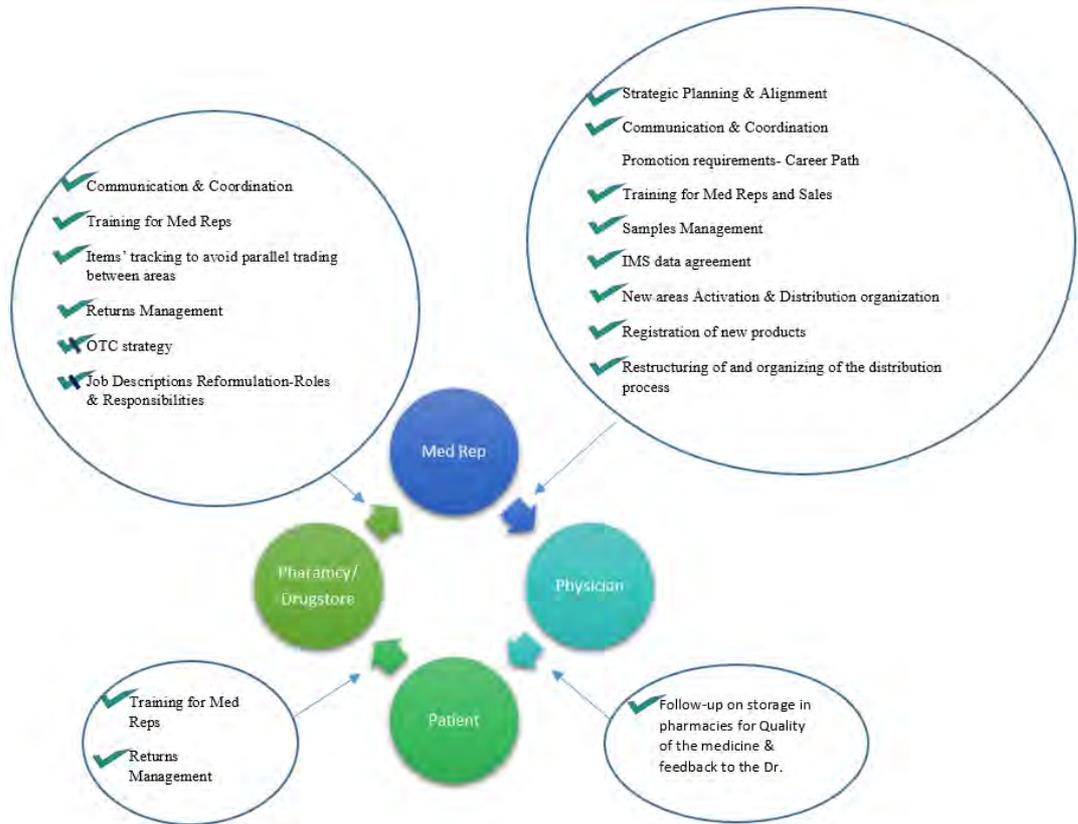
included all personnel in the Marketing Department and **Cluster B2** in Sales. We have conducted single interviews with the manager and the supervisor separately, and three group interviews were conducted with the salesmen executives for primary questions to collect dysfunctions and secondary group interviews with quantitative questions to calculate hidden costs. After the collection of hidden costs, the training on management tools, and the mirroring of diagnosis results to participants, project groups have been formed and action plans have been prepared for implementation through the socio-economic process. The Strategic Piloting Logbook tool which stimulates quick outcomes by reducing hidden costs and forecasts future potential by promoting the execution of the strategic internal and external action plan. Moreover, the Periodically Negotiable Activity Contract tool, which consists of setting the required actions to be taken to execute the Priority Action Plan tool, in order to achieve organizational goals and targets (Savall, 2003). Intervention will consume time and face opposition from employees naturally. As a result, for an intervention to be efficient and efficacious, time should be transposed between collective training and the individual work (Savall et al., 2008; Cappelletti & Baker, 2010).

Our study aims at revealing new performance indicators for the performance measurement of the Med Reps and of the organization simultaneously. The mixed indicators of three types help in the assessment of the performance of the company and its employees in multiple aspects and dimensions preparing future tactic and improvement to reach strategic goals (Cappelletti & Baker, 2010).

4 - RESULTS & DISCUSSION

As the Horivert intervention process advises, the project groups in every basket of solution seek to resolve the extracted dysfunctions and reduce their associated hidden costs. The projects suggested for the baskets of solutions reduce associated hidden costs engendered by the dysfunctions in the prescription drug cycle, the Economic Balance of every project studies the feasibility and risks of implementation, whether by reducing hidden costs, recycling hidden costs into added-value, or generating new profit opportunities for the company. We complement every project we have implemented with a list of indicators following the same three dimensional continuum qQfi of the Qualimetrics approach explained previously in chapter two of the methodology: qualitative-quantitative-financial. These indicators help monitor the projects implemented and serve as measurement indicators, whether financial or non-financial (qualitative and quantitative), to prevent future dysfunctions in the Prescription Drug Cycle and add value to the performance measurement process of Med Reps simultaneously.

Figure 4: Summary of projects' point of interference in the Prescription Drug Cycle.



As we can see in the figure above, we have denoted the impact of every implemented project on the relationship between the key players in the prescription drug cycle. It is important to note that several actions affect several levels of interaction in the cycle, however we have decided to allocate the project to their first point of interaction in the corresponding relationships, knowing that the cycle of prescriptions will be affected in later stages. For instance, a prompt follow by the Med Rep and the salesmen on the storage conditions of a refrigerated medicine in the pharmacy affects the feedback of the patients. As a matter of fact, the patient taking a drug in poor condition will have a negative feedback about the drug's efficacy, which hinders the patient's satisfaction as well as the physician's future prescribing behavior for example.

To the first level of interaction between the Med Rep and the physician, we attribute the projects that have a direct impact on the motivation of the Med Reps and the improvement of the quality of their input on the job. The second stakeholder that is directly impacted by the motivation of Med Reps is the pharmacy. Therefore, the training of Med Reps improves the quality of their calls, the strategic alignment helps them know on which key message to stress and which medication is in shortage, helping them to align their activity with the stock.

Moreover, the management of samples helps Med Reps on their job to make the physicians commit to the prescribing behavior when there is a new indication. The acquiring of new products and the implementation of a development strategy through a better coverage of areas makes the job of the Med Reps in the front line of initiating prescriptions and hence increasing the demand on the medicine for the specific indication. In addition, the IMS data managed by a specific person lets the Marketing supervisors allocate more time in the field with the Med Reps.

In addition, the communication between the Med Reps and Salesmen allows the Med Reps to get a clear idea about the prescribing behavior of the physicians by the tracing of the prescriptions. Salesmen can help a lot in this matter because of their good connections with the pharmacists and high number of daily visits for the pharmacies.

Moreover, and most importantly, the organization of the distribution process impacts a lot the job of the Med Rep in advising about the drug. As a matter of fact, physicians tend to prescribe a drug that is accessible by the patient. Otherwise, the doctors would go for other alternatives, which degrades the efforts of the Med Reps. It is notorious that the organization of distribution and the decrease in the errors of the orders impact several levels of interactions as well: the patient who does not find the medicine in the pharmacy gives the feedback to the physician and hence affects his prescribing behavior. In addition, the satisfaction of the pharmacist is partly subject to the prompt distribution of the orders by the company with minimal errors, in addition to the management of returns.

Actually, the unavailability of the drug in the pharmacy or the dissatisfaction of the pharmacist with the service of the company due to delays in distribution and errors in invoicing and poor management of returns leads them to substitute the prescribed medicines by an alternative. This also happens when the product is near-expiry, hence the importance of aligning the sales forecasts and purchasing with the marketing activity. For instance, a prompt follow-up by Med Reps and Salesmen on the storage conditions of a keep-cold medicine in the pharmacy affects the feedback of the patients. As a matter of fact, the patient taking a drug in poor condition has a negative feedback about the drug's efficacy, which hinders the patient's satisfaction as well as the physician's future prescribing behavior.

After conducting the projects for every Basket of solutions, we have retrieved from the Piloting Logbook of actions the proper indicators for measurement. In this section, we can see all the indicators that we selected in order to have a better measurement metrics for the work of Med Reps. The indicators in the table above are of three types: Qualitative, Quantitative, and Financial, which is compliant with the Qualimetrics triple continuum.

As a result of the projects implemented to reduce the dysfunctions in the prescription drug cycle, the figure above shows a summary of performance indicators. On the left, the indicators can be adopted to measure the performance of Med Reps, and on the right side the indicators could help in the general assessment of performance of the cycle in general. We can therefore divide the

indicators of our piloting logbooks into two big categories: the performance measures that serve the Performance measurement of the Med Reps and the other indicators that interfere in the PDC but over which the Med Reps do not have control.

“Some pharmacies in the South area buy the products from the company and sell them to pharmacies in the North area or to drugstores that distribute to all pharmacies across Lebanon”, said the Med Rep X and Sales Manager.

This is a real problem in the financial assessment of the sales ratios in a specific area where the market share might appear to be high, whereas the products are being sold to the end-user in a different area without any credits to the Med Rep who has initiated this prescription in this second area. We have labeled some batches of our products in order to track them through secret clients who went and bought them from the pharmacy where we had doubt about parallel trading. This initiative has given us an idea about the flow of drugs between areas, but has not allowed us to track performances of Med Reps in accurate numbers. Therefore, the 2-D barcoding system would allow us in the future to track the pharmaceutical product from its entry to Lebanon, to its storage first in the warehouse, second in the pharmacy or drugstore, until the very end step of its purchasing by the end-user. This system allows companies to know accurately the volume of demand of a product in a certain area and track its movement between areas and pharmacies. This would give a better numerical feedback about the Med Reps’ sales in a certain area which, even today, is not accurate and does not fully reflect the real demand in a certain geographical area. Also, the returns will be prevented because stocks outside of the company’s warehouse will be accessible through the 2-D barcode system.

Table 1: Summary of Indicators per type: Qualitative, Quantitative, and Financial.

	<i>Immediate Results</i>	<i>Creation of Potential</i>
<i>Qualitative</i>	Customer Awareness & Satisfaction	Strategic Alignment
	Drug Availability	Quality of the call
	Level of Prescription substitution	Medical knowledge exam
		Teamwork, creativity, and common projects
		Market Intelligence exam: Competitors
	Time to delivery	

<i>Quantitative</i>	Prescription Index	
	IMS data	
	Coverage rate and frequency	
	Market Share	Delta Growth=Market growth of this Area/Capacity of this Area
	Activation rate of new accounts	
	Growth rate of existing accounts	
	Returns Index	Plan execution rate
<i>Financial</i>	Sales	

The organization of work procedures and the development of working conditions were translated into a better distribution of orders, hence decreasing the time to delivery and the errors in orders. This happened by the premises restructuring, the automation of stock control and invoicing. The project that took the most of our time and efforts was the organization of orders' invoicing and distribution and, consequently, the management of returns. As a matter of fact, cars were not being sued efficiently:

“the driver used to come back twice the same day to deliver an order or because he took the wrong order”. The invoicing process used to be unorganized: “salesmen send the order through WhatsApp to the invoicing ladies and a lot of errors occurred like a duplication in the order that used to be sometimes invoiced twice, hence delivered twice and returned the second time...”

The warehouse was the same area where preparation of orders occurred as well as the pricing of products which also incurred a lot of errors due to lack of area organization.

“The warehouse area was the joint of pricing, warehousing, and preparation in addition to open space offices hindering privacy and making the premises more and more a busy and chaotic area”. Going from these dysfunctions, and since they affect the prescription conversion into sales due to delays in their availability and low level of customer satisfaction through errors in orders. Therefore, we have developed the project in Basket 4 to organize the work flow, reduce the hidden costs, and increase the invoicing and distribution efficiency. In this project, the first change initiative conducted was the restructuring of premises: we have moved the offices to the other side of the building and reorganized the area into three different areas: warehousing area, pricing area, and preparation area where we have allocated a labeled zone for each geographical district ready for distribution. The restructuring of the premises costed the company around 30,000€ as a tangible

investment, but the return on investment was high and this can be clearly seen in the evaluation table of chapter 4.

Second, we have settled a schedule for an automated invoicing: *“we have assigned to each geographical district a different time schedule through the day to organize the invoicing process”*, said the Quality Manager. *“This way also, drivers do not come back several times during the day because another order has been invoiced while they were delivering outside”*. In addition, salesmen send their invoices through the system to avoid errors in the name of the pharmacy, the geographical district, as well as duplication of orders. And at the end, there has been a reconciliation twice per week between the actual stock and the book stock using the wizard system in order to decrease the level of errors in stock management. The returns has also been assigned to one person and automated also using the wizard system with the same invoicing number of the initial bill, instead of returning products manually and increasing the level of error. In the wizard system we use the 1-D barcode tracking system. After conducting the projects for every Basket of solutions, we have retrieved from the Piloting Logbook of actions the proper indicators for measurement. In this section, we can see all the indicators that we selected in order to have a better measurement metrics for the work of Med Reps. The indicators in the table above are of three types: Qualitative, Quantitative, and Financial, which is compliant with the Qualimetrics triple continuum.

Table 2: Summary of Performance Indicators: General Piloting & Pharmaceutical Performance Measurement Indicators.

Set 1: Performance Measurement Indicators from the DPC	Set 2: General Piloting indicators in the DPC
<input type="checkbox"/> Sales Achievement	<input type="checkbox"/> Retention Rate & Employee Loyalty
<input type="checkbox"/> Prescription Index	<input type="checkbox"/> Distribution Efficiency: Error rate & Delays
<input type="checkbox"/> Activation Rate of new accounts	<input type="checkbox"/> Samples timely delivery
<input type="checkbox"/> Coverage of customers	<input type="checkbox"/> Stock forecasts alignment with sales: Expired & Out Of Stock products
<input type="checkbox"/> Growth of Active Accounts	<input type="checkbox"/> Working conditions and tools
<input type="checkbox"/> Plan Initiatives & Execution	<input type="checkbox"/> IMS Data Management through Work Organization
<input type="checkbox"/> Creativity & Market Intelligence and Awareness	<input type="checkbox"/> Strategic planning and Alignment
<input type="checkbox"/> Returns Index	
<input type="checkbox"/> IMS Index	
<input type="checkbox"/> Customer Awareness & Satisfaction of promotion and OTC substitution	

The separation above shows the global indicators that monitor the performance in the Prescription Drug cycle, versus the local indicators dedicated to measure the performance of Med Reps, whether their input or output. As a matter of fact,

the local indicators for Med Reps include financial measures such as the Sales achievement. The quantitative indicators include the Prescription Index and IMS Index, the coverage of customers, the activation rate of new customers... As for the qualitative measures, these include the quality of conveying the message and receiving the commitment of the physician during the call, the good relationships developed with customers, the teamwork mentality, and the new ideas and initiatives on the job. When it comes to global indicators, these aim to monitor the flow of the operations to ensure the minimal interruptions of dysfunctions for the prescription initiation and conversion into sales.

The global indicators are mostly quantitative, and these include the retention rate of employees in general and of the Med Reps in specific and the distribution efficiency in terms of number of errors in the invoicing and the time to delivery. As for the qualitative indicators, these include the timely delivery of samples to Med Reps. The financial indicators, these include the proper alignment of sales forecasts with the sales growth in the market, hence making the wasted products and the substituted prescriptions caused by the near expiry dates or by shortage in the medicines very minimal or even null.

As a result of the projects implemented to reduce the dysfunctions in the prescription drug cycle, the figure above shows a summary of performance indicators. On the left, the indicators can be adopted to measure the performance of Med Reps, and on the right side the indicators could help in the general assessment of performance of the cycle in general. We can therefore divide the indicators of our piloting logbooks into two big categories: the performance measures that serve the Performance measurement of the Med Reps and the other indicators that interfere in the PDC but over which the Med Reps do not have control.

5 - CONTRIBUTION TO PRACTICE & KNOWLEDGE

The contributions of our intervention research tackle two levels: theory and practice. In contribution to the **scientific knowledge** and to the Strategic Management Control, it has been demonstrated in this study that several factors have to be considered in a performance measurement system. As a matter of fact, we have perceived a high correlation between performance improvement and performance measures, incentive scheme, centralization of decision-making, work organization, quality defects, customer satisfaction, and strategic alignment and steering. The contribution to theory as well can add different measures to the performance measurement systems such as the time to delivery that is very critical in the availability of the drug and hence the prompt response to pharmacies' orders. The indicator of time is very important in our days due to the high competitive and fast-paced markets. At the level of **practical contribution**, and besides the dysfunction regulation and hidden cost reduction, the outcome of our intervention research is a holistic performance measurement system for Med Reps. This system helps monitor all the dysfunctions in the PDC to avoid interruptions of all kinds to happen and the impact on interactions between Key Players in the PDC.

In order to localize the effect of the indicators in the Prescription Drug Cycle, we can now explain how these changes can impact the cycle and its key players, either directly or indirectly. For instance, the satisfaction of employees with their remuneration system and incentive scheme increases their level of motivation on the job and hence supports the phase of initiating a prescription. The efforts the Med Rep puts on the job become bigger and of better quality, which enhances the customers' satisfaction with the service and the way they are being treated. Therefore, a better remuneration system improves the interaction between the Med Rep and the physician as well as the pharmacist simultaneously. If both players are satisfied with the quality of the service and the products, then there would be higher chances of prescriptions to be initiated and lower risks of substituting the prescribed drug in the pharmacy.

The Med Reps' performance takes the majority in the outcome about whether a medicine is prescribed or not. After being convinced with the molecule and its indication, the physician's prescribing behavior is impacted by the call from the approach the Med Rep makes to the commitment the Med Reps get. Moreover, the table below shows some indicators stemming from Basket 2 that aims at improving the communication and cooperation between the different actors in the organization. As for the basket 4, the development of some working conditions can have a great impact on the effectiveness of Med Reps' performance. Moreover, some process could be standardized in clear processes for the customers to be comfortable about. As a matter of fact, we can measure the conversion or activation rate of customers. Based on this indicator, we can set a target for the Med Rep for example to have at least one client per week converted into an active account. If it is a physician, this means that he will prescribe the medicine due to a change in the way of communicating with him. Medical doctors want to receive a regular visit from the company's representative, with samples along with new studies and information. As for the pharmacy, lower risks of substitution might take place. This happens with a proper organization of the distribution to the different geographical areas so that the time to delivery is short. Also a better communication decreases the number of errors in the invoicing. Moreover, the cooperation between the Salesman and the Med Rep responds better to the needs of pharmacies and increases their level of satisfaction.

As a result, the effect of communication and cooperation between different actors on the cycle of prescriptions can be noticed in many ways. For instance, convinced and gratified physicians prescribe the drug more. Simultaneously, drug availability in pharmacies and drugstores is affected by the satisfaction of these clients and willingness to purchase the drug even sometimes in quantities and hence do not allow for interruption of the cycle and substitution of the medicine of interest. In contrary, the drug purchased could be an alternative for the prescribed one.

Going to Basket 3, we can notice the effect of a better strategic management and alignment on the effectiveness of the Med Rep's work. As a matter of fact, synchronized decentralization is key in the set of solutions for Basket 3. The timeliness of samples is directly associated with its decentralization from the General Manager of the organization in a systematic process. This way, we can avoid delays and improve our chances in getting prescriptions and improving the demand on a certain product. This is very similar to the execution of the plan in

terms of events, focus groups and conferences... the more we are agile and active in the field, the better we perform. In addition to the indicators stemming from the latter, strategic planning for the marketing alleyway for every product is essential and can be the basis for the measurement of the Med Rep's performance in comparison with target strategy. A better forecast for the incoming stocks allows to evaluate the performance of Med Reps based on the expired products quantities that should not exist anymore. At this level, we measure the level of responsibility people take in executing the company's strategy. For instance, we measure the number of events per quarter for each area and the cost of expired products that disrupt the prescription chain.

The **shortage of a drug** and its **near-expiry date** make the drug unavailable in pharmacies and drugstores in sufficient quantities or even in shortage. This affects the patients' behavior and leads to substitutions in addition to a negative feedback about the drug's accessibility making the prescription's initiation by the physician more and more difficult.

In this set of indicators stemming from Basket 4, getting new promotional materials help Med Reps in conveying the message with the appropriate tools at hand. New tablets helps in the self-reporting about the number of visits along with the corresponding frequency, and the quality of the call's feedback. The most important indicator is the number of returned products that indicate the end of an old prescription behavior. From the above indicators generated in the Piloting Logbooks, we can extract two sets of indicators for the Performance Measurement of Med Reps: the specific indicators to the Prescription Drug Cycle and the general set of indicators for a general piloting.

Financial figures alone can give a false evaluation of Med Reps' real performance. We have worked in our intervention research on several projects to resolve a number of dysfunctions that interrupt the normal flow of Prescription Drugs and make the financial figures irrelevant like the distribution efficiency, the improvement of HR functions including skills' enhancement and regular trainings, the decentralization and organization of work procedures... Consequently, we have set holistic measures of performance for Med Reps and for the company on the local and global organizational levels simultaneously. New performance indicators taken into consideration are qualitative such as the Quality of the call, quantitative such as the Returns Index. In addition, we have preserved the financial results in a 60% proportion due to their imperative importance for the functioning of the organization and 40% on non-financial indicators. The quantitative measures are considered in the incentive calculation, especially the quantitative ones. The company evaluates performance and pays the incentives for Med Reps per semester. The indicators have been categorized into two main groups: the group of Immediate Results like the Intercontinental Medical Statistics (IMS) data and the group of Creation of Potential such as the Rate of plan execution (campaigns, conferences...). Moreover, we have introduced two non-financial rewarded competitions that ensure the horizontal distribution of our products in pharmacies and their availability, steer the proper communication between Salesmen and Med Reps, and trace the feedback about the prescription outcome from the physicians.

While we were evaluating our performance measurement system and working on dysfunctions' recycling into added value in the Prescription drug cycle, we have

chatted with managers in multinational pharmaceutical companies to know more about their performance measurement systems and benchmark our local system. For instance, Novartis has been adapting performance indicators that assess the work of Med Reps based on qualitative, quantitative, and financial indicators. Financial measures have a 70% weight of the performance measurement while other metrics account for 30%. The bonus scheme remunerates the financial and non-financial outcomes and inputs of performance at Novartis starting the year of 2019. In a chat with a manager at GlaxoSmithKline Company, the latter has adopted a purely qualitative performance measurement system based on the quality of the call with the physicians. GSK has decided to set purely qualitative performance measures after a sanction they have gotten due to unethical conducts in the pharmaceutical market. As for Abbvie and Boehringer Ingelheim, the performance measurement system is divided into financial and non-financial performance measures, but the incentive scheme is purely based on financial outcomes.

6 - CONCLUSION

In traditional performance measurement systems, immediate economic results gain all the focus of actors, especially that of managers. The culture of *quick wins* and *hit and run* hinders the creation of potential and consequently holds back future economic results. The major measure of management accounting for Med Reps are the Sales figures, whether financial like the turnover or quantitative like the market share and other ratios.

The traditional performance measures have become obsolete long time ago. However, the mindset of managers hasn't really shifted into a wider look. Therefore, and since Med Reps self-report their daily calls, management control has stepped up its efforts in tracing the input of Med Reps on the job. The financial outcomes have been the only concern of managers.

The performance in the Prescription Drug Cycle is unstable and is subject to novel dysfunctions every day. Therefore, integrating a standard performance management system for Med Reps such as the Balanced Scorecard might not be effective since new dysfunctions can come to light as we go (Ezzamel et al., 2008). In addition, there is high instability in organizational performance (Kaplan & Norton, 2001; Berggren & Bernshateyn, 2007). We could not address all zones of interruption since new dysfunctions might emerge constantly, therefore the importance of cleaning up dysfunctions from the Prescription Drug Cycle in different rounds through the socio-economic intervention. The integration of the Balanced Scorecard perspectives can be very helpful and interesting in planning the strategy of the company and setting performance indicators. Nevertheless, the socio-economic management control is essential in driving the change in a cyclical way that reveals new dysfunctions with new cycles of intervention, with the help of the tools, and with the cultural brainwashing it brings to the organization vis-à-vis the human capital and the long-term creation of potential.

Performance measures have been built around **sticks and carrots** and that is fine for many types of the 20th century tasks. Moreover, finance is a permanent crucial success factor because we cannot waste resources, but we need to allocate them in

an efficient way. As a matter of fact, it is a matter of ethics to use effectively the resources shareholders make available for us in pharmaceutical companies. As we have explained before, sales measures and financial indicators are good to consult but they are only back looking. These measures are not extremely useful because they are lagging indicators. If in December you find out that your patient share is not where it should be, it is too late to do anything about it. We should be measuring for instance somewhere in May and June what the attitude of various healthcare practitioners is to our particular therapy, the attitude of pharmacies towards our company, and the input of Med Reps. Moreover, the company has to ensure a smooth flow of operations and services for the prescription cycle not to be interrupted at any stage and hidden costs not to be generated at any level of interaction between its key players. This then would allow us to assume that we will reach that lagging indicator which is called sales by December. If we are not, then we will be able to re-address our strategy in the third and fourth quarters.

For the 21st century, the mechanistic rewards and punishments approach around sales measures doesn't work anymore, and more often does harm. The focus on the sales measure in the pharmaceutical industry leads to poorer performance. Therefore, measures should be anchored into something deeper and more holistic. What is worrying in the rubble of the economic collapse is that too many companies are making their decisions and policies about talent and people, based on assumptions that are outdated and measures that are unexamined. Businesses today need to think of a set of questions and assumptions beneath businesses protocols on how to motivate people and measure their performance.

If companies need to get out of the performance measurement mess, and if they really want to improve performance in its social input and consequently in its economic outcome, the answer is not to do more of the same things. Companies in general and the pharmaceutical industry in particular need a whole new approach.

In sum, we have worked on the performance measurement indicators to make them holistic, like the socio-economic management control methodology. Our new measurement system, with the help of the socio-economic tools, integrates qualitative, quantitative, and financial metrics in performance measurement and considers several stakeholders' perspectives in the evaluation of Med Reps' performance.

REFERENCES

- Bocci, F. (2004). Defining Performance Measurement. A Comment. *PMA Newsletter* Vol. 3 Issue 1/2 September, pp. 20.
- Boje, D.M., and Rosile, G-A. (2003). Comparison of socio-economic and other trans-organizational development methods. *Journal of Organizational Change Management*, 16(1), pp. 10-20.
- Boswell, W. R., & Boudreau, J. W. (2000). Employee satisfaction with performance appraisals and appraisers: The role of perceived appraisal use. *Human Resource Development Quarterly*, 11(3), 283-299. doi:10.1002/1532-1096(200023)11:3<283::AID-HRDQ6>3.0.CO;2-3
- Bowhill, B. (2008). *Business Planning and Control- Integrating Accounting, Strategy and People*. West Sussex, England: John Wiley & Sons
- Bruns, W. (1998). Profit as a performance measure: Powerful concept, insufficient measure. In Performance measurement – Theory and practice: *The first international conference on performance measurement*, Cambridge, 14–17, July.
- Buono, A. F., and Savall, H. (2007). SocioEconomic Intervention in Organizations: The IntervenerResearcher and the SEAM Approach to Organizational Analysis. *IAP*.
- Buono, A. F., Savall, H., & Cappelletti, L. (Eds.). (2018). Intervention Research: From Conceptualization to Publication. *IAP*.
- Buzzell, R. D., & Gale, B. T. (1987). *The PIMS Principles: Linking Strategy to Performance*, Free Press, New York.
- Cappelletti, L. (2009). Performing an internal control function to sustain SOX 404 and improve risk management: Evidence from Europe. *Management Accounting Quarterly*, 10(4), 17.
- Cappelletti, L. (2010). Vers un modèle socio-économique de mesure du capital humain? *Revue Française De Gestion*, 36(207), 139.
- Cappelletti, L. (2016). Implementing a well-suited management control system in professional services firms: Evidence from the notary public offices sector. *Institut De Socio-Économie Des Entreprises Et Des Organisations (Écully, Rhône). Recherches En Sciences De Gestion*, (117), 53.
- Cappelletti, L. (Performer). (2019, February). Positioning the Socio-Economic theory within the five dominant theories in Strategic Management Control. Balamand University, Lebanon.
- Cappelletti, L. G., and Baker, C. R. (2010). Developing human capital through a pragmatic-oriented action research project: A French case study. *Action Research*, 8(2), 211-232.
- Cobbold, I.M., & Lawrie, G.J.G. (2002). *The Development of the Balanced Scorecard as a Strategic Management Tool*. 2GC Active Management Ltd, Maidenhead, UK.
- Covey, S. R. (1989). *The Seven Habits of Highly Effective People*. New York: Fireside personality dimensions: A replication among English adults. *Journal of Genetic Psychology*, 162, 119-123.
- Dambrin, C., and Robson, K. (2011). Tracing performance in the pharmaceutical industry: Ambivalence, opacity and the performativity of flawed measures. *Accounting, Organizations and Society*, 36(7), 428-455.
- Feder, R. A. (1965). How to Measure Marketing Performance. *Harvard Business Review*, 43, May-June, 132-142.

- Goodman, S. R. (1970), *Techniques of Profitability Analysis*, Wiley Interscience, New York.
- Ittner, C. D., Larcker, D. F., & Randall, T. (2003). Performance implications of strategic performance measurement in financial services firms. *Accounting, Organizations and Society*, 28(7-8), 715-741.
- Jaworski, B., & Kohli, A. (1993). Market Orientation: Antecedents and Consequences. *Journal of Marketing*, 57(3), 53-70.
- Kaplan, R. S., and Norton, D. P. (2004). Measuring the strategic readiness of intangible assets. *Harvard Business Review*, 82(2), 52-63.
- Kaplan, R.S., & Norton, D.P. (1992). The Balanced Scorecard- Measures That Drive Performance. *Harvard Business Review*, January-February, pp. 71-91
- Latour, B. (1999). *Pandora's hope*. Cambridge, MA: *Harvard University Press*.
- Mari, R., & Shirley, S. (2007). How pharmaceutical marketing communications affect prescribing practices, is there an ethical conflict? Focus on physicians, medical clerks and drug representatives: The case of the western side of Puerto Rico.
- Narayana, S. A., Pati, R. K., & Vrat, P. (2014). Managerial research on the pharmaceutical supply chain—A critical review and some insights for future directions. *Journal of Purchasing and Supply Management*, 20(1), 18-40.
- Neely, A., Mills, J., Platts, K., Richards, H., Gregory, M., Bourne, M., and Kennerley, M. (2000). Performance measurement system design: developing and testing a process-based approach. *International journal of operations & production management*, 20(10), 1119-1145.
- Niven, P. R. (2003). *Balanced scorecard step-by-step for government and nonprofit agencies*. Hoboken: Wiley.
- Philip, K. (2002). *Marketing Management. Millenium Edition*.
- Savall, H. (1979). *Reconstruire l'entreprise: Analyse socio-économique des conditions de travail [Reconstructing the enterprise: Socio-economic analysis of working conditions]*. Paris: Dunod.
- Savall, H., & Zardet, V. (1987; 2008). *Mastering hidden costs and socio-economic performance*. Preface by David Boje. N.C.: *Information Age Publishing*.
- Savall, H., and Zardet, V. (2004-2011). *Recherche en sciences de gestion: Approche qualimétrique. Observer l'objet complexe. [Research in management sciences: The qualimetrics approach: Observing the complex object]*. Paris: *Economica*.
- Savall, H., Zardet, V., and Bonnet, M. (2008a). *Releasing the untapped potential of enterprises through socio-economic management (No. halshs-00780720)*.
- Schweitzer, S. O., & Lu, Z. J. (2018). *Pharmaceutical Economics and Policy: Perspectives, Promises, and Problems*. Oxford University Press.
- Simons R. L. (1995), *Levers of control: How managers use innovative control systems to drive strategic renewal*, Boston Massachusetts: *Harvard Business School Press*.
- Smith, M. C. (2014). *Principles of Pharmaceutical Marketing*. Routledge.
- Van der Kolk, B., Van Veen-Dirks, P. M., & Ter Bogt, H. J. (2019). The impact of management control on employee motivation and performance in the public Sector. *European Accounting Review*, 28(5), 901-928.