HOW DOES THE MEDICAL DEVICE INDUSTRY HELP ADVANCE THE QUALITY OF CARE IN THE AREA OF METABOLIC DISEASES AND SPECIFICALLY IN BARIATRIC SURGERY? A STUDY AT MSS

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ABSTRACT:

The continuous development of medical supply industry widened the potential to improve patient care worldwide. Especially in the surgery field, medical devices have been indispensable to the current surgeries, many of which being lifesaving. Considering the multitude of factors contributing to delivery of medical devices to the end user, the medical supply companies are now required, more than ever, to optimize their performance in order to sustain the best quality of patient care.

Performance optimization within organizations is a process of change that should consider, in addition to the internal factors, the external factors that are highly dynamic and instable. The collection of those factors characterizes the highly dynamic business environment nowadays.

Diagnosing the root causes of suboptimal performance in business organizations has been the ultimate quest of management for long. Henri Savall, a French professor, introduced the Socio-Economic Approach to Management (SEAM) to help businesses worldwide enhance their management process. In this proposal, we adopt the SEAM approach to boost the engagement of medical supply industry in the healthcare market. We aim to apply this project within the environment of MSS, a company devoted to providing quality care in Lebanon and the Arabic Gulf region.

Keywords: SEAM, Organizational Change, Bariatric Surgery, Arabic Gulf, KSA, VUCA environment.

PROBLEM STATEMENT

Morbid obesity has grown to take epidemic prevalence worldwide especially in the Arabian Gulf. Fueled by personal wealth, the aging process, and a sedentary lifestyle, the high prevalence of obesity, among other non-communicable diseases, is driving the market demand of the medical devices be

it in sales and service provision. Among the different medical obesity related interventions, bariatric surgery is one of the most common.

Med Surg Solutions (MSS) is leading a company devoted to providing the latest cutting-edge surgical solutions for patients in the Kingdom of Saudi Arabia, and the Arabic Gulf region including Lebanon.

Operating in the medical device industry, MSS is facing a multitude of challenges, which present themselves due to the continuously evolving environment marked by advancements and innovations. With the present challenges and continuous change and in line with the VUCA concept describing the volatility, uncertainty, complexity and ambiguity governing the surgical field, medical device companies are now required, more than ever, to optimize their performance by delivering the latest and safest cutting-edge medical solutions that will enhance and sustain the highest quality of patient care.

RESEARCH OBJECTIVES

This research study is expected to diagnose the business inefficiencies at MSS and to address those challenges. Accordingly, the research output will lead to outcomes related to the human capital management, prevalent processes, communication flow, and financial costs.
The research questions aim to:

1. Identify and define the dysfunctions associated with the operations at MSS, particularly within the bariatric surgery domain.
2. Identify the root causes of the dysfunctions at MSS.
3. Test and assess proposed solutions, according to SEAM, targeting the causes of the identified dysfunctions at MSS.

Accordingly, the research objectives can be categorized under social and economic as follows:

Objectives	
Social	**Economic**
• Increase the Headcount	• Increase Sales
• Scale the sales and marketing teams	• Decrease Healthcare Cost
• Increase market share • Lead the Change • Create	• Increase Productivity • Decrease operating cost • Faster recovery for the patient and chance to resume work

competitiveness among team members	• Faster recovery for the patient • Enhance the patient's productivity
• Improve the quality of patients' lives	

CORE HYPOTHESES

The major observed hypotheses are:

Explicative	Descriptive	Prescriptive
The business cycle at MSS at the sales and marketing levels is suboptimal and does not meet the expectations and set targets	The sales and Marketing department do not work in synchrony negatively affecting the team's performance.	- Develop an engagement among team members with the general strategic goals
Duplication of work among team members who are working in silos across various geographical areas with below expectation productivity	Different people and team members across MSS work on the same projects and tasks unaware of progress achieved. This is creating inefficiency and suboptimal productivity.	- Adopt a more comprehensive internal communication plan lead by HR - The use of an updated ERP system for information sharing - Building a culture of communication - Coaching and training managers
Inefficiency in processing activities and meeting deadlines coupled with a lengthy approval process and lack of proper planning and standardization across the sales and marketing	Delays are observed at the level of meeting deadlines across the sales and marketing departments leading to losses and poor planning of activities and events. MSS is unable to meet the evolving and dynamic nature of the operations	- Update and revamp the existing processes - Conduct intensive training on the new ERP system

departments at MSS		
Missing potential market opportunities and slow pace in penetrating emerging markets	Most new products introduced are learned of through third parties by being only reactive on the marketing front to new and potential opportunities.	- Design cross-departmental activities - Align sales team with MSS strategy in penetrating emerging markets - Market approach should be initiated from a pre-set strategy and not driven by customers and the market. - Continuous monitoring of the implemented approach for reaching the market - Approach the market through various departments - Expand the role of the marketing department
Misalignment with MSS vision to be consultant and healthcare partner in the market negatively impacting trust by the surgeons and end users, thus affecting their decision making and the sales output.	Sales team members opt more often to being salespeople rather than consultants to hospitals and surgeons. They sometimes focus on their sales target and the price instead of their clinical and technical know-how which is sometimes suboptimal.	- Develop MSS Academy - Reintegrating the existing team through intensive clinical, technical and sales workshops

LITERATURE REVIEW

INTRODUCTION

Medical device industry is an integral part of the medical technologies and an essential block in health systems nowadays (Sarvestani & Sienko, 2018). Ranging between simple instruments and complex machines, the availability of medical supplies, coupled with the effective use, is vital for proper health service provision (Sarvestani & Sienko, 2018). Estimated by the World Health Organization to exceed 10,000 brands and types, medical equipment production is a part of huge globalization movement. This growing body of knowledge and technology advancements in the field of medical solutions has undoubtedly made the world seem closer and more accessible, and many examples are available today to express how global our business world is (Merrill, 2020). However, this globalization has added its share of negative impacts and fragility to the markets it created (Merrill, 2020).

Realizing that the very majority of companies and business entities and structures today are not independent of the environmental and contextual factors that affect their processes and outputs on daily basis, it is imperative to understand those factors and the way they impact the company's performance and outcomes (Merrill, 2020). Organizations face shear stress to cope with the very dynamic environment thus improving their efficiency and quality is key to their competitive advantage. Within that context, many approaches have surfaced aiming at improving the processes and the performance. However, considering the gap between organizational context and the quality improvement process (Goffnett, Lepisto, & Hayes, 2016), Goffnet and colleagues argue that coupling process improvement with organizational development approaches, such as SEAM, would lead to augmented effects (Goffnett et al., 2016). Conceptualized and implemented by Henri Savall, SEAM goes beyond the quantitative methodologies to generate a wholesome figure of the organization's performance and identify the associated dysfunctions (Goffnett et al., 2016).

This literature review sheds the light on how using SEAM would help the medical solutions industry, through organizational process revamping, to navigate the hardships of the highly dynamic and uncertain environment. This is intended to boost the industry's contribution to quality patient care and up-level the stakeholders engagement including the hospitals, physicians, industries, and the governance bodies- all working to provide a better outcome.

VUCA Environment

Definition of VUCA

With the challenges presented by the changing dynamics of worldwide contexts, scientists at US Army War College coined the term "VUCA" (Baran & Woznyj, 2020): Volatility, Uncertainty, Complexity, and Ambiguity (Merrill, 2020). Volatility comes from the continuous change of the world nowadays, uncertainty comes from the unpredictable nature of the current flows and the shape the change might take in the future, complexity comes from multiple layering and interconnectivity of the factors. The collection of those factors make

up the ambiguous nature of the whole dynamics highly interconnected and mixed issues in our daily life (Billiones, 2019). The VUCA concept has been used across different disciplines, including business contexts, to describe instability and fragility (Baran & Woznyj, 2020). Literature and knowledge translation around VUCA concept have both grown so well since then (Baran & Woznyj, 2020).

Volatility

Literature defines "volatility" as the sudden, extreme, and multilayered changes occurring to the environment (Codreanu, 2016; Lawrence, 2013). Its incidence is higher nowadays (Lawrence, 2013) and it is harder to characterize those changes with a consistent pattern as in the case of a stable world (Codreanu, 2016). Such changes cannot be dealt with using the past experience and outdated knowledge resources (Codreanu, 2016).

Uncertainty

The difficulty to predict the coming changes accompanied with the ambiguity of the present conditions makes it difficult to forecast the environmental changes and to formulate decisions based on those speculations (Codreanu, 2016).

Complexity

With the increasingly globalized world, borders are dissolving and businesses are becoming more and more intertwined. This adds many mediating factors (Lawrence, 2013) that contribute to the already existing difficulties in managing the highly dynamic environment. Among others, the high mobility and access nowadays, the exponential advancements of the new technologies, in addition to other social factors all group to contribute to the dynamic nature of today's world (Codreanu, 2016). This additional layer of factors makes it hard to realize "what caused what" and to clearly understand the relationships between the conglomerate of factors and conditions involved in the context (Codreanu, 2016; Lawrence, 2013).

Ambiguity

The collection of the above characterizations of the "VUCA Environment" make up the ambiguity feature: the inability to produce "yes/no solutions" (Codreanu, 2016). Partly caused by the confusion resulting from the additional layers of complexity (Lawrence, 2013), it is the inability to sense the threats and seize the opportunities before it is too late (Lawrence, 2013).

The need to Change

In this fragile and stressed environment, it is important that we understand this "VUCA world" and realize that change is inevitable (Merrill, 2020). Looking at the overwhelming factors that fuel the need to adapt our work environment, one can realize the need to be responsive to changes (Baran & Woznyj, 2020; Merrill, 2020). Failing to adapt businesses to this dynamic environment will ultimately lead them to failure (Merrill, 2020). Thus, it is important that leaders and business executives explore the best practices available to build their response plans effectively (Baran & Woznyj, 2020).

Among the heated discussions around VUCA environment and adaptation to change, various emerging ideas try to shape the best way that executives can use to drive the desired change (Baran & Woznyj, 2020). The concept of Agility emerged as the set of the necessary measures to maneuver

effectively through the VUCA environment (Baran & Woznyj, 2020). However, the top management level might lack the resources and evidence enough to back their intervention (Baran & Woznyj, 2020). Within their review, Baran and Woznyj (2020) briefed a three-level approach to Agility: individual, team, and organizational (Baran & Woznyj, 2020). At the individual level, Agility included technical and emotional skills such as learning new tools and crisis management. At the group level, Agility focus on effective, group-based decisions. For organizations, Agility is about strategic planning and seizing the opportunities (Baran & Woznyj, 2020).

Assuming that businesses and companies nowadays are operating under an "increasingly VUCA" environment (Baran & Woznyj, 2020), it is important to identify and define the VUCA environment special to each business entity.

Before dwelling further into the details of change management under VUCA stressors, we find it very useful to sum up, below, the findings of a couple of literature articles on the issue of change management. Authored by Meghana Pandit, Chief Medical Officer, Oxford University Hospitals NHS Foundation Trust, Oxford, UK (Pandit, 2020), by Baran and Woznyj (Baran & Woznyj, 2020), by Kirk Lawrence (Lawrence, 2013), and by Aura Codreanu (Codreanu, 2016).

One of the frameworks proposed as a guide through VUCA conditions is by Bob Johansen (Codreanu, 2016). The author defines a VUCA acronym: Vision, Understanding, Clarity, and Agility (Codreanu, 2016). Creating the vision and translating it into action results replaces volatility. In this regard, managers should be capable of translating this vision and mission into "changed business practices" (Codreanu, 2016). Codreanu (2016) referred to Charles Duhig to describe the power of identifying and maintaining certain key habits that will ultimately yield the desired change. However, it is important to work out the differences between the different stakeholders and group members in setting the priorities (Codreanu, 2016). Ultimately, the mutual agreement will lead to the constitution of a sense of belonging and community membership (Codreanu, 2016).

In the same framework, Understanding replaces uncertainty. Summing up the review by Codreanu (2016), this part entails actions that reflect powerful communication skills, willingness to take action and follow-up, and clearly stating the goals and objectives (Codreanu, 2016).

Clarity replaces complexity. The author defined clarity as the ability to give direction and highlight the strengths and weaknesses clearly. According to the review by Codreanu (2016), it is important to understand the root causes of employee performance and interpret it in the context of the organizational culture as a better way of achieving clarity, especially over "complicatedness" (Codreanu, 2016). Because many factors dictate the dynamics of the organizational culture, understanding the context of employee behavior might lead to a better judgment of what works better (Codreanu, 2016).

Defined as the ability to adapt flexibly and swiftly (Codreanu, 2016), Agility replaces Ambiguity. Looking at Agility from the management

perspective, Agility focuses on the outcomes and the people as well (Codreanu, 2016). Barriers to agility, especially in complex organizations, involve complicated hierarchies, inhomogeneous missions and conflicting business ideas, poor performance processes and customer service (Codreanu, 2016).

In their article titled Managing VUCA: The human dynamics of agility (Baran & Woznyj, 2020), Baran and Woznyj (2020) identified six obstacles to Agility as per the answers of their respondents; many do overlap with the rest of references.

1. Inertia of the Status Quo

This obstacle allows the continuation of the already-existing practices just because they are familiar. Resisting the change gets in the way of the desired change; humans adhere to the existing processes as they usually require less mental effort (Baran & Woznyj, 2020). Especially in hard times, employees might feel comfort adhering to the existing processes. Additionally, clinging to the existing processes might be a result of leadership failure to sense the need for change or to provide direction in hard times (Baran & Woznyj, 2020). The authors give an example where a company coupled the customer feedback with a positive change in policies and procedures to enhance customer interactions and exit the status quo of its operations (Baran & Woznyj, 2020).

2. Time and Organizational Design Barriers

This barrier refers to operating “in silos” (independent structures). Operating in silos might exert strain on resources and time, and it hinders the cooperation and collaboration across teams. This obstacle, just as the status quo inertia, is common to many companies (Baran & Woznyj, 2020). However, operating under the VUCA stressors does further exacerbate the negative outcomes of this obstacle “ because those situations are precisely ones that need robust collaboration and sensemaking” (Baran & Woznyj, 2020). The inability to adopt robust communication and effective teamwork will eventually lead to failure in managing the organizational change during the response to VUCA stressors (Baran & Woznyj, 2020).

3. Unresponsiveness to Customer Needs

During “VUCA times”, it may be hard for organizations to provide the proper needs to their customers including the manner in which they should be providing those needs (Baran & Woznyj, 2020).

4. Growing Pains

Growing pains define the set of hardships an organization goes through while scaling up in size or while transforming into Agile (Baran & Woznyj, 2020). Baran and Woznyj (2020) sited a report from McKinsey consulting which described how a company collectively went into this Agility transformation through a program which contributed to the change (Baran & Woznyj, 2020).

5. Slow Communication and Bureaucracy

In the study by Baran and Woznyj (2020), the respondents to the study identified slow communication and bureaucracy as barriers to effective implementation of organizational agility (Baran & Woznyj, 2020). The authors further imply that formal rules and guidelines that slow down the decision-making processes are factors that hinder agility (Baran & Woznyj, 2020). Addressing communication and bureaucracy issues is critical to run an Agile response across the whole organization without lags and suboptimal performances (Baran & Woznyj, 2020).

6. Outdated Processes

Processes that are out of date may be in use either because the employees are not aware of better processes, or due to the fast pace of the changing environment (Baran & Woznyj, 2020).

Before closure, Codreanu (2016) reinstated that defining the best interests of the higher authority and the individuals as well is of critical importance (Codreanu, 2016). This allows us to move swiftly to the findings of the next reference: Baran and Woznyj (2020) where we shed light on the strategic and C-level approaches to navigating through the VUCA conditions.

Strategically Managing the Response to VUCA

In large organizations, leaders and top managers play a critical role in responding to VUCA stressors (Baran & Woznyj, 2020). It is important that they create the necessary atmosphere incubating the change, fostering the agile performance, and rewarding those who adopt it (Baran & Woznyj, 2020). Such commitment by the top management level is important to drive the development of the human potential towards a more agile performance. In addition, the intervention of the top managers should involve close review and examination of the organizational flows and design that might hinder their transformation into an agile entity. In addition to selecting team members who have the will and talent to participate in the transformation process, it is suggested to align the levels, functions, and systems of the organization (Baran & Woznyj, 2020). A part of this aforementioned talent management is maintaining an open communication code and training employees on decision-making in real time (Baran & Woznyj, 2020). Also, knowledge sharing and fostering teamwork are integral to the process as they provide a strategic advantage and a wholesome analysis of the business issues because they are transferring knowledge in teams (Baran & Woznyj, 2020). This helps with reducing ambiguity and coping with complexity (Baran & Woznyj, 2020).

The proactive customer centeredness helps provide for customer needs through understanding their environments (Baran & Woznyj, 2020). Employing robust methods to get insights, be it through analyzing existing data or collecting fresh information, can help the organization move along the change journey and promote an “informed adaptation” (Baran & Woznyj, 2020).

While growing into an Agile organization, leaders and managers can help drive the process through fostering this “growth mindset”. Building this flexible yet moving culture of change is critical to drive the change but still effectively manage setbacks and the tension between the existing practices and the new ones (Baran & Woznyj, 2020). Building this culture and communicating with the

whole organization should be on transparent basis especially that ensuring the availability of the information allows the organizations to take the proper decisions. Hence, appropriate communication helps overcoming ambiguity and provides the decision-making process with a lot of supportive clarity of evidence (Baran & Woznyj, 2020).

Lawrence Kirk (2013) detailed the building blocks of "developing leaders in a VUCA environment". To respond effectively to VUCA, Human Resource and talent management units should start at the talent acquisition level (Lawrence, 2013). Referring to Horney, Pasmore, and O'Shea (2011), Lawrence recommends the use of structured methods to assess agility and critical thinking during the selection process. This is in alignment with reframing the leadership activities to focus more on the skills required for an effective response (Lawrence, 2013). Adopting this approach will ultimately bring leaders with the desired capacities into the organization (Lawrence, 2013).

Another approach, also by Kirk, is to train the existing workforce to become agile. Leadership development programs built to deal with VUCA stressors should be delivered fast and effectively (Lawrence, 2013). Using multiple approaches such as mentorship, coaching, assignments, job rotation and scenario training is effective to develop critical thinking skills. In addition, companies can use simulations as they allow employees to employ their skills in a safe environment and provide the leadership with opportunities to assess their workforce on the go (Lawrence, 2013).

Fostering the Agile culture is manifested at the individual and system level within the organization. Rewarding the behavior and adopting performance management systems based on the VUCA response are essential for the new culture. This approach will sustain the newly developed or hired talent and will ripple the effect throughout the organizational performance (Lawrence, 2013).

One of the manifestations of VUCA in healthcare is the COVID19 pandemic. This novel virus was officially defined early 2020 as the novel SARS CoV-19, and it has left a heavy impact on the health systems and health workforce worldwide (Pandit, 2020). Although Pandit's work is contextual, it is useful to shed light on the strategic, yet overlapping, concepts while maneuvering through the VUCA world.

1. Strategic Goals

According to (Pandit, 2020), the strategic intent is defined as the "position of the organization in the regional/national context". In the context of the article, this translated into mid-term plans including multiple stakeholders, thus giving those plans the confidence and clarity needed by the leaders to move ahead. The mutual agreement on the goals, along with the clarity in discussions and decision-making, made it possible to amend the plans on the go as required (Pandit, 2020). Facing VUCA, the leaders should be ahead of the events, well prepared. Such top-level commitment and involvement drove the organizational intent towards the goal, aid and recovery from COVID19 (Pandit, 2020).

2. Partnerships

Although it is context-specific, Pandit (2020) described how collaborating with the trusted stakeholders augmented the capacities to face the COVID-caused turbulence. The regional leadership, in particular, was clear and translated into

mutual collaboration in securing the equipment needed for response (Pandit, 2020). Such a collaboration is hoped to be the "new normal" for the healthcare sector especially that including the different stakeholders allowed extending the continuum of care to those who needed it the most whether in hospitals, schools, and others (Pandit, 2020).

3. Clear and Consistent Communication

The early stages of the crisis withheld many anxieties, which needed to be addressed. Using multiple platforms and applications, clear communication allowed the leaders to stay in contact with their teams (Pandit, 2020). In addition, meeting with the staff around meeting tables and while on duty allowed for sharing concerns and collecting direct feedback. Such a connection is recognized as a supportive action leading to boosting the staff confidence in the process (Pandit, 2020). To minimize the divide between the staff and the leadership during COVID19 response, NHS sent out daily communications on the most recent findings to all users (Pandit, 2020). Also within the COVID19 context, the sharp rise in the adoption of new consultation methods, such as video consulting, as well as the redistribution of clinical settings and workforce specialties, demonstrated a cultural change and a strong, cohesive response "in the face of adversity" (Pandit, 2020).

4. Compassion

Although it was context-based, but the development of an ethical and emotional support has empowered the change and allowed for compassionate and agile decision-making process (Pandit, 2020). Listening to the staff and addressing their needs consistently are essential to demonstrate compassion and understand their challenges and context (Pandit, 2020). The trust formed during and after the transition usually needs time, however, the development of this culture is usually quicker under tough conditions if the leadership had already set the push for such a transition (Pandit, 2020).

Those approaches and concepts elucidated by Pandit "would apply equally to macro and micro- environments within healthcare systems such as national bodies or regulators, regional teams and local healthcare providers." (Pandit, 2020). However, the critical point is to establish a clear vision, communicate with the staff, and build-up a trusted connection between the staff and the leadership (Pandit, 2020).

Change in a VUCA Environment

Merill (2020) gave four main themes for the change: the strategic plan, the agile structure, the culture, and leading the change (Merrill, 2020).

1. Strategic Plan

A strategy document should be written to explain the plan of responding to VUCA (Merrill, 2020). In addition to addressing the internal forces that would affect the way a company responds to the external opportunities, the strategy plan also reacts to ambiguity and uncertainty (Merrill, 2020).

2. Agile Structure

Organizational structure might be one of the barriers to an effective transition (Merrill, 2020). Organizations with a flatter structure are easier to work through although flatness require additional leadership effort (Merrill, 2020). Google and Amazon are examples of effective leadership in flat organizations in which leaders are closely involved with the action (Merrill, 2020). Another example is the Haier appliance company: everyone is accountable to the customers; although a little central direction guides them, there is clear and common goal setting (Merrill, 2020).

3. Culture

The culture is the set of rules and regulations that guide the organizational performance. However, cultural change is difficult (Merrill, 2020). Leaders should take the initiative to change the culture as unexpected events happen, thus leading the change and influencing the whole organizational culture (Merrill, 2020). However, it is important to align the culture with the strategy (Merrill, 2020).

4. Leading the Change

Leading the change can be difficult especially if the existing practice has yielded positive outcomes (Merrill, 2020). Several factors would create resistance to change but addressing them properly is key. It is important to address those factors through multiple approaches. Through creating a sense of urgency (Merrill, 2020), the organizational performance focuses on the target such as falling revenues. The change team drives the performance change: a group of individuals working as the "change agent". This change team should include people outside the organization's management team (Merrill, 2020). Communicating the vision, enabling action through identifying the obstacles and removing them, and publicizing the wins are critical along the way. Eventually, the "new" approaches are anchored through explaining the changes and recognizing the participants. It is important to recognize successes as it reinforces behaving according to the "new" norms (Merrill, 2020).

Socio-economic Approach to Management (SEAM)

Approaches to Organizational Development

Improving efficiency and quality at organizations is key to their competitive advantage. However, considering the gap between organizational context and the quality improvement process (Goffnett et al., 2016), Goffnet and colleagues argue that coupling process improvement with organizational development approaches, such as SEAM, would lead to augmented effects (Goffnett et al., 2016). SEAM goes beyond the quantitative methodologies and generate a more wholesome figure of the organization's performance (Goffnett et al., 2016).

INTRODUCTION TO SEAM

Henri Savall conceptualized the Socio-economic Approach to Management (SEAM) in the 1970s to systematically drive an organizational change (Goffnett et al., 2016). Through clearly understanding the individual and

collective organizational factors, SEAM lays a solid foundation to sustain the desired change within an organization (Goffnett et al., 2016). This methodology has been widely applied across different disciplines and business sectors. Adopting the SEAM methodology allows the definition and recognition of the dysfunctions in organizations (Goffnett et al., 2016). The rigorous SEAM research has identified six main categories of dysfunctions in organizations: "working conditions; work organization; communication/coordination/ conciliation problems; time management; lack of integrated training; and strategy implementation along with organization-specific issues." (Goffnett et al., 2016).

One of the main advantages of SEAM is exploring the "hidden" costs associated with the identified organizational dysfunctions. In their review, Goffnet and colleagues refer to Conbere and Heorhiadi (2011) showing the advantage of SEAM compared to the traditional management; the latter sees the figures in a fragmented way without incorporating the human factor into the analysis (Goffnett et al., 2016).

A Brief on How SEAM Works

The major attributes of the SEAM methodology are: 1) it is people oriented, 2) it focuses on the alignment between the strategy and operations, 3) it aims to develop the human potential, 4) it utilizes a qualitative and a quantitative methodology, 5) it uses the qualitative tools as the primary diagnostic, and 6) it hires an external consultant to lead the project (Goffnett et al., 2016).

The project leader, looking for the root causes of dysfunctions, interviews the employees at different levels of the organization generating narrative data. The interviews are analyzed and categorized into themes, resulting themes are later presented to the management to be discussed (Goffnett et al., 2016).

On a parallel level, the project team conducts a thorough review of the organizational strategies, policies and processes, documents, and other relevant material to generate data insights complementing the qualitative interviews (Goffnett et al., 2016). The required changes are then prioritized and ordered, the necessary steps are then taken (Goffnett et al., 2016). At this point, the management should be a positive contributor to the change and be prepared to drive it the proper way (Goffnett et al., 2016).

The change using SEAM works along a three-way axis system: the policy axis, the tools axis, and the change axis (see figure 1 below) (Chaanine, Tabchoury, & Bonnet, 2018).

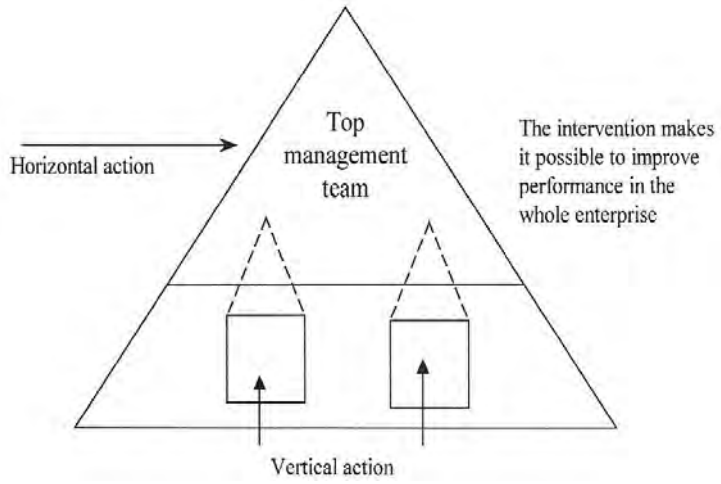
SEAM and building agililty

The concept of agile organization has been recently integrated with SEAM and contributes greatly to the field of organization development. The definition of agile is being characterized by four routines: The ability to strategize in dynamic ways, accurately perceive changes in their external environement, test possible responses and implement changes in products, technology, operations, structures, systems and operations. Smart companies need to put the principles of agility into action through using specific intervention strategies, formulating and executing an agility strategy and converting hidden costs associated with the organizational design into value added activities (Worley et al., 2015). The aim is transforming into an

organization capable of facing the future with confidence. This transformation is achievable through applying SEAM which creates an intra-organizational movement by the intervention research process. The socio-economic factor is moderated by the commitment of the leadership, and parallel initiatives. The higher the commitment of the leadership, the more effective the change. Implementing SEAM involves internal dynamics which adapt to the transformational initiative. Such interventions assure the acceptability of the socio-economic approach by the internal community (Worley et al., 2015), therefore reducing resistance to change and creating a developmental movement.

The Change Axis

The change axis represents the actual implementation of the intervention. Known as the Horizontal-Vertical method, also HORIVERT, the project leader and team work across both, horizontal and vertical levels to collect the required data and transmit the findings across the different management levels. Below is a figure depicting the HORIVERT intervention that has been described above.



Tools of SEAM

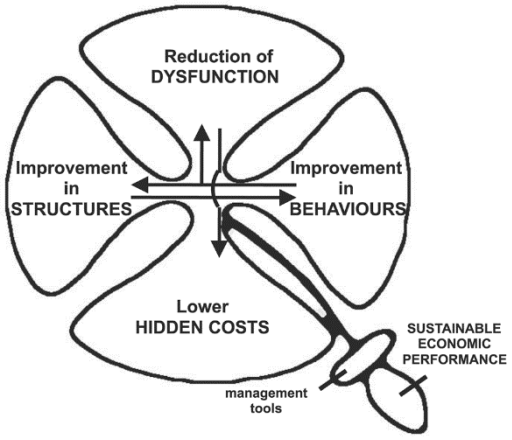
SEAM employs six tools: 1) periodically negotiable activity, 2) internal-external strategic action plan, 3) priority action plan, 4) piloting logbook, 5) time management, and 6) competency grid.

The SEAM Four-leaf Clover

The four leaves of the SEAM clover serve to show the interactions that affect the organizational performance (Quint, 2017). At the very center of this clover is the human interaction with the organizational structures. Those interactions, being both ways, leave a clear impact on the economic performance of the organization (Quint, 2017).

Below is a figure of the SEAM clover (Savall, 2003). The interactive frictions among the structures and behaviors cause multiple dysfunctions. The different dysfunctions fall into the six groups we mentioned earlier (Savall,

2003). The dysfunctions manifest through five different symptoms: absenteeism, work accidents, personnel turnover, lack of quality, and direct productivity losses (Savall, 2003).



Medical Solutions Markets: Opportunities and Challenges

Over tens of years, investing in medical device industry and using it within the healthcare sector have saved lives and contributed to quality care (Sarvestani & Sienko, 2018). Although the acute interventions of medical supplies are prominently in the spotlight, this industry has also contributed to major successes in the area of non-communicable diseases as well (Sarvestani & Sienko, 2018).

Long before those with lower-income, the countries with high and upper middle income have generated and used the medical supplies. It is estimated that the majority of medical devices in lower income countries are acquired by donations (Sarvestani & Sienko, 2018). This transfer of technology, along with the associated contextual split, is yielding suboptimal results in patient outcomes (Sarvestani & Sienko, 2018). In addition, a multitude of factors contributed to the debatable success of medical device use: the gap between its initial design and scaling it on target setting, the lack of medical device maintenance, the lack of well-trained professionals who will ultimately use and promote those devices, and challenges with proper commercialization (Sarvestani & Sienko, 2018).

The healthcare system issues added further burdens to the service provision. The high number of medical supplies, along with poor usability, increase the error margin thus compromising patient safety (Doyle, Gurses, & Pronovost, 2017). Only in the States, $1.7 billion were attributed to costs associated with medical errors. Pushed by the fragmented system structures and the low control on errors, the JCI alerted of the inadequate training of staff using the medical devices for patient care (Doyle et al., 2017). Given the high influx of medical devices, and the dramatic increase in the number of utilized equipment, hospitals face challenges meeting the required standards of care (Doyle et al., 2017). Doyle and colleagues (2017) recommend safe use of medical equipment through setting clear strategies, purchasing policies, and continuous training to minimize errors during patient care (Doyle et al., 2017).

In their article, Adbulsalam and Schneller (2019) highlight the shear costs of the supply chain within the hospital industry. Within their review, they define supply expenses as the "second largest" cost in hospitals (Abdulsalam & Schneller, 2019). This leads the hospital administrations, under the stress of cost-cutting motives, to search for saving opportunities within their supply process (Abdulsalam & Schneller, 2019). Adbulsalam and Schneller (2019) argue, based on multiple references, that the fragmentation of the supply chain in the healthcare sector is a major factor contributing to the "complicatedness" of the process. Additionally, this nature of the healthcare supply chain has not improved much along the years (Abdulsalam & Schneller, 2019). Challenges include, but are not limited to, dealing with a high numbers of suppliers, stock management issues, the need to outsource services along the supply chain (Abdulsalam & Schneller, 2019).

Focusing on surgical interventions, Ali and colleagues (2017) highlight the critical role of personnel in the delivery of safe, quality surgical care (Ali et al., 2017). Addressing the context of middle- and low-income countries, the article used the WHO analysis guides to assess the shortfalls in trained personnel delivering surgical and anesthetic care. The results showed that the majority of providers were not surgeons but general practitioners. Also, the teams providing care were not homogenous across the different facilities (Ali et al., 2017). Although general practitioners traditionally perform certain types of surgical interventions, initiatives to equip them with additional skills have been going on after global recommendations. This came in part of applying scalable solutions to cover for missing surgical procedures (Ali et al., 2017).

Case Application: Obesity in the Gulf Region

Narrowing down to the Gulf region, Khalil (2018) defined "Diabesity", Diabetes associated with Obesity, as a major public health concern especially in the Arabian Gulf. Characterized as the major underlying cause of glucose intolerance, obesity has been on the rise reaching a high prevalence (Khalil et al., 2018). With very promising outcomes, bariatric surgery to treat obesity has increased tremendously. This trend is expected to keep rising as well (Khalil et al., 2018), however, regulations and accreditation measures should lead to appropriate patient selection for bariatric surgery. In addition, properly educated teams including multidisciplinary specialties should conduct those surgeries (Khalil et al., 2018).

In line that we formulate our research question: How does the medical device industry advance the quality of care in the area of metabolic diseases and specifically in bariatric surgery?

In this context, medical device companies have a crucial role in shaping the healthcare landscape by being responsive to the newest technological solutions in the medical industry. These entities should be a major player in introducing the latest inventions to provide solutions for the most prevailing diseases including obesity and hence improving the quality of life for patients up to saving their lives. This can be achieved by being aggressively proactive in the market and transferring the required knowledge to healthcare providers in the most effective way. In that context, having the proper internal environment is a prerequisite to the success of medical device companies' mission in the healthcare ecosystem.

RESEARCH METHODOLOGY

The research proposal will aim at using the SEAM approach to integrate and align the human capital, the set processes and the required knowledge with the strategic vision of MSS.

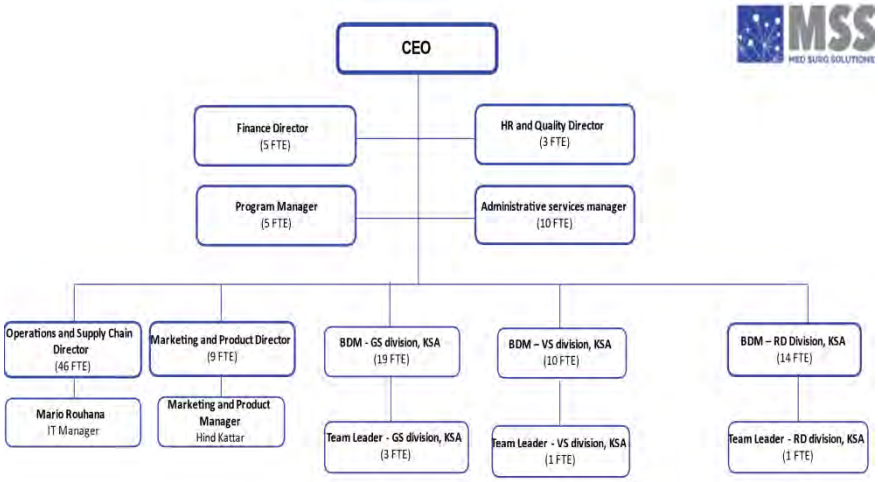
Using SEAM and the HORIVERT process is of great importance to identifying the dysfunctions at all levels at MSS. It is the ideal approach that implies conducting action research that addresses the inefficiencies at the human capital, processes, and operations levels by building buy-in from all constituents at MSS and relying on the importance of the quantitative and qualitative research output to provide insights on how to approach the dysfunctions from various angles.

We will be using the HORIVERT process for conducting the interviews. They will be processed horizontally at the directors' level at MSS and vertically throughout the marketing and sales departments in order to identify dysfunctions at those levels. Interviews have been conducted horizontally covering 15 first level directors. This will be followed by cluster meetings, mirror effect, expert opinion and horizontal project phase. We will similarly move to the vertical intervention covering 48 staff members in Saudi Arabia.

Interviews with external stakeholders will also involve nurses, obesity surgeons, procurement officer, product and CME coordinators for a total of 5 interviewees from King Faisal Specialist Hospital in KSA in addition to two Key opinion leaders.

The timeline will be allocated between fieldwork, for a year and half and writing the thesis in a period of one year.

Below is MSS organizational chart:



WORK IN PROGRESS

We currently finalized the open ended interviews and conducting the qualitiative analysis and witness quotes.

TIMETABLE

Year >	2021								2022												2023					
Month >	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Horizontal Interviews																										
Qualitative Analysis And Witness Quotes																										
Mirror Effect And Expert Opinion																										
Steering Committee 2Hours/meeting																										
Horizontal Project Phase																										
Vertical Intervention																										
Qualitative Analysis of witness quotes																										
Hidden Cost Calculation Interviews																										
Qualitative analysis of hidden costs																										
Mirror Effect																										
Expert opinion																										
Project phase																										
Project Implementation																										
Project Review And Evaluation																										
Final Data Analysis																										
Editing And Submission																										

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