Effective leadership in BPM implementations: A case study of BPM in a developing country, public sector context

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Abstract: Public sector organizations across the globe have shown a keen interest in adopting BPM, yet research studies have identified many obstacles impeding successful BPM outcomes. While leadership has been emphasized as critical for BPM to succeed, it is still an under-researched area in BPM. The limited discourse on BPM leadership is a-theoretical and provides few guidelines on what effective BPM leadership is. This paper views BPM leadership from a Complexity Leadership Theory (CLT) perspective and applies the Actor Network Theory (ANT) to assist in understanding the complex social networks in leading continuous process improvement. Employing an in-depth single case, this study explores a successful BPM initiative in a Sri Lankan public-sector organization. The study results provide a rich understanding of leadership actions that support BPM success, which can be applied by practitioners to support BPM-leadership practice, and for future research investigating the role of leadership within BPM contexts.

Keywords: Business process management, leadership, public-sector organizations, developing countries, actor-network theory, complexity leadership theory, case study.

1 Introduction

Public sector organizations across the globe have shown a keen interest in adopting BPM principles and practices [1, 2] as the key solution [3] to effectively handle citizens’ demand for better government services—particularly in developing countries [4].
However, the successful implementation of BPM initiatives has been an ongoing challenge in the public sector [5] of developing countries with an approximate failure rate of 85% [6, 7]. Critical success factors for BPM in general [8], and in the public-sector developing country contexts in particular [6], have pointed to top management support and leadership as one of the key elements of success [9]. However, there is a dearth of research to explain the phenomenon of leadership in BPM initiatives [10]. While leadership is a well-defined discipline, a clear, theoretically grounded definition of leadership in BPM is to date absent [9, 10]. Leadership in BPM is defined broadly to include all those who are capable of exerting influence in the organization [11] or positively influence the project goal [12]—specifically, it’s a “complex phenomenon, with many internal and external aspects that interact and influence leadership behaviors in BPM environments (p.9)” [10]. Leadership styles and strategies need to fit both with the environment and the intended BPM strategies [13]. In summary, the role of leadership in complex business process change in the public sector, particularly in developing nations, is crucial for success; however, it is under-researched. We ask the question: “What are the effective leadership actions that contribute to the success of BPM initiatives in the public sector of developing countries?” The paper first considers an appropriate perspective on leadership to ensure consistency in identifying and analyzing leadership actions within a BPM context. It uses Actor Network Theory to explore leadership actions in a complex environment and proposes a conceptual model for analysis of leadership in the case organization. After an introduction to the case design and background, the case is analyzed according to the conceptual model.

2 Theoretical underpinnings and the Conceptual Framework

2.1 Leadership actions within Business Process Improvement initiatives

Public sector BPM initiatives involve interaction with a diverse network of interrelated stakeholders with a variety of conflicting interests. Studies [9, 14] describe the need for leaders to actively manage these networks to avoid delays and resistance to change. In this study, we used Actor Network Theory (ANT) to explore the leadership actions within the complex social networks in a public sector process improvement effort. ANT allows for the study of ‘the focal actor’ (in this context, a leader) within a social network; it also recognizes the power structures (a key property of public sector organizations [15, 16]) and the global and local networks that exist between the Government and various other organizations, such as international donor organizations, the beneficiary departments, systems implementers, and the external consultants, who play a crucial role in these initiatives, enabling an exploration of these interactions.

ANT has been used to explain the social processes associated with technology implementation, business process change, and information systems in developing countries in varied contexts [14, 17]. The theory aims to identify and explain the process by which “successful networks of aligned interests are created through the enrolment of a sufficient body of allies and the translation of their interests so that they are willing to participate in particular ways of thinking and acting that maintain the network” (p. 42) [18], and to scrutinize the reasons for the failure of networks to establish themselves
With its emphasis on empirical enquiry, ANT allows an analyst to observe the key actors and the relationships between different actors through the phases of the translation process. Latour [20] explained how “actors know what they do and we have to learn from them not only what they do, but how and why they do it” (p.19).

We focus on the ANT process of translation, which creates the ordering effects in a network. Translation is described [21] as the process of “creating temporary social order or moving between orders through changes in the alignment of interests in a network” (p.54). The translation process includes four chronological steps: problematisation, interessement, enrolment, and mobilization (see Table 1). It explains how a successful network aligns the actors’ interests in the network. Multiple actors interact in a BPM initiative with their individual goals and interests; thus, the translation process can suitably explain the actors’ interaction and alignment of interest. A key proposition of this study is that leadership behaviors of the focal actors will determine the success of the translation process in a BPM initiative.

Table 1. Core theoretical concepts applied in this case study [adopted from, [19] and [21]]

| Concept         | Definition                                                                 |
|-----------------|---------------------------------------------------------------------------|
| **Focal Actor** | Attempts to translate the interests of other actors to their own interests in a network. A focal actor is an actor who initiates the translation process. |
| **Actor-network** | Heterogeneous network of aligned interests, including people, organizations and standards [19] |
| **Translation** | The process of the alignment of the interests of a diverse set of actors with the interests of the focal actor [18] |
| **Problematisation** | The first moment of translation, during which a focal actor defines identities and interests of other actors that are consistent with its own interests [18]. In the case of BPM initiatives, the problematisation will be related to control of resistance to change. |
| **Interessement** | The second moment of translation, which involves negotiating with actors to accept definition of the focal actor [18]. In the case of BPM initiatives, the interessement will involve use of monetary and non-monetary motivational strategies to gain acceptance of the initiative |
| **Enrolment** | The third moment of translation, wherein other actors in the network accept (or get aligned to) interests defined for them by the focal actor [18] |
| **Mobilization** | Mobilization constitutes methods employed by the focal actor to the legitimacy of spokespersons. Achievement of complete elimination of resistance in a network |

2.2 The Role of Different Leadership Actions

Considering the dynamic nature of the environment in which modern organizations exist, it is argued that the traditional models of leadership are ineffective to explain the dynamic, nonlinear, and contextual nature of leadership in organizations [22, 23]. Public-sector settings (particularly in developing-country contexts) are complex and leaders need to manage the challenges created by these complexities. Complexity Leadership Theory (CLT) predicts leadership behaviors in such contexts and recognizes the
behavioral and situational influences and dynamic interactions between different elements to form self-organizing systems, change, and adaptation [24]. CLT is defined as “a framework for leadership that enables the learning, creative, and adaptive capacity of complex adaptive systems (CAS) in knowledge-producing organizations or organizational units” (p.304) [24]. It views an organization as a collection of complex adaptive systems (CAS) and presents leadership as emergent, interactive and dynamic [24]. CLT asserts that effective leadership will create an adaptive space and defined this space as “context and conditions that enable networked interactions to foster the generation and linking of novel ideas, innovation, and learning in a system (p.12)” [25]. CLT describes three types of leadership behaviors: ‘operational leadership’ behavior aims to uphold the traditional, bureaucratic hierarchies, alignment, and controls within an organization; the ‘enabling leadership’ behavior fosters creating and maintaining conditions that enable CAS to actively engage in creative problem solving, adaptability, and learning activities; and, the ‘entrepreneurial leadership’ behavior that is emergent, interactive, and dynamic, and produces adaptive outcomes (i.e. alliance of people, ideas, technologies, and cooperative efforts) in a social system [25, 26]. Entanglement is defined as a dynamic relationship between operational, enabling, and entrepreneurial leadership [27] and it explains the need for enabling leadership as an interface between operational and entrepreneurial leadership. A key strength of CLT compared to other leadership theories is that it provides a holistic view of leadership implemented at different levels of the organizational hierarchy, as well as the relational interactions that are dynamic in nature and emergent in different situations [27].

2.3 The Conceptual Model

Fig.1 depicts the research model, which incorporates all the elements of the theoretical underpinnings. It provides the basis for investigating how leadership actions (pertaining to the three different leadership types delineated in CLT) across the four phases of the ANT translation process and amongst diverse contextual influences, contribute to successful BPM initiatives in the public sector in developing countries.
3 Study design and context

3.1 Case study design

In this paper a single in-depth case study in a Sri Lankan government hospital was used as a rich source of evidence to identify leaders and their actions for successful BPM implementation. Data was collected through nine interviews from key stakeholders from February 2017 to July 2017. A range of official documents were also collected and analyzed to augment and triangulate observations from the interviews. The data was analyzed iteratively across three phases using the systematic combining approach [28]. NVivo Version 11 was the primary data management tool, and a comprehensive “coding rule book” [29] was used as a guide to perform the data summarization and grouping; firstly according to the ANT translation sub-processes and secondly, according to the three leadership functions of CLT. Details pertaining to contextual factors were captured separately.

3.2 Introducing the case organization

The case study is of an IT-enabled BPM initiative in a regional public hospital in Sri Lanka—Dompe District Hospital. The project took place under the eHealth program initiated by Sri Lanka’s apex national agency Information Communication Technology Agency (ICTA) responsible for public sector IT modernization, to improve the efficiency of healthcare services in the country, and has been recognized (nationally and internationally) as a success story that thrived through many challenges [30].

Dompe’s transformation from a poor to an exemplary health care service delivery organization was initiated in 2011 by a young Medical Officer (MO) in charge of the hospital; the hospital was notorious for its lack of organization, poor quality of services, and chaos. Most of the staff were close to their retirement and had absolutely no concern for patient care and quality service delivery, leading to a highly unproductive, disorganized, and laid-back organizational culture. The MO, in consultation with a local community leader (CL), established contacts within the local volunteer community, industries, and religious dignitaries to create a vision of ‘happy and content patients’. The initial stages involved a situational analysis, research on better practices, and to design and rebuild the dilapidated hospital buildings. In the next stage, the patient care processes were focused on the gradual replacement of manual systems with a Hospital Health Information Management System (HHIMS), the incorporation of an online appointment system, and the introduction of a mobile channeling system using Short Message Service (SMS) for citizens. The ICTA was key in providing the required technical knowledge, and funding resources.

The Dompe e-Hospital initiative has been recognized as a success by various local and international bodies, including winning the presidential award for productivity in 2015. The Hospital was (and still is) in the continuous monitoring & improvement phase [31] of its BPM endeavor. Today, the ICTA uses the Dompe e-Hospital initiative as an exemplar for its national eHealth program. After many challenges in introducing HHIMS to government hospitals, ICTA has now embarked on an ambitious drive to
implement the system in 300 hospitals with a centralized digital healthcare management strategy to change the healthcare landscape of the country. Overall, this case demonstrates the feasibility and success of a new service model that is now replicated in the Sri Lankan public healthcare sector.

4 Study findings

This section describes how the ANT translation process is applied to explain the actions of the focal actors (who demonstrated leadership within the eDompe case study) to design and implement the transformation activities, and how a stable network of heterogeneous actors was formed. There were three focal actors, namely the Medical Officer (MO) [provided the overall leadership, and the main interface between various external parties involved.], the eHealth Program Manager of ICTA (ICTA-PgM) [appointed by the ICTA to devise the strategy, design, and execution of the eHealth Program], and the local community leader (CL) [liaison between the local community] as individuals, and at times, other hospital staff also demonstrated leadership. Leadership actions from these four focal actors across the four phases of the translation process are discussed in the following sections.

4.1 Leadership actions observed within the ANT-Problematisation phase

The problematisation process was initiated by the MO through a situational analysis that identified staff concerns. A general meeting was called to discuss the poor situation of the hospital, at which the MO explained to the staff his vision, his strategy to overcome the issues, and his plan to improve the reputation of the hospital. A total of thirteen leadership actions were observed in the problematisation phase and are grouped around the three CLT leadership behaviors: Operational, Enabling, and Entrepreneurial leadership. Leadership actions from these four focal actors across the four phases of the translation process are discussed in the following sections.

Fig. 2. Leadership actions in the Problematisation Phase
Six (6) operational leadership actions were observed in the problematisation phase. (i) **Leadership Capacity Development** related to the ICTA-PgM identifying leaders, giving them ownership of the BPM initiative and providing them with support, enabling them to develop leadership capacity and to drive the eHealth implementation. (ii) **Handling of Bureaucracy & Maintaining National ICT Standards** captured the provision of the required technical and logistical support while ensuring that the required rules, regulations and government policies were adhered to for procurement and development. (iii) **Effective Resource Identification & Allocation** relates to the provisioning of funding. The MO interacted with ICTA for software development support and the CL for physical infrastructure development support, funded by local industries and concerned members of the community. (iv) **Focus on Visible Outcomes** involved the MO designing and communicating targets in consultation with the core staff team, and the support of the CL and ICTA-PgM. (v) **Assertion of Formal Authority** relates to the positive and tactful use of formal authority and bureaucracy to support innovation and change. The MO used his personal connections with senior authorities in the organization on multiple occasions to establish his power and influence. His tact avoided internal confrontations. (vi) **Effective Handling of Legal Requirements and Quality Standards**. The 5S concept [35] initially introduced by the CL was re-introduced to the hospital staff by the MO with new emphasis and training.

Six (6) enabling leadership actions were observed in the problematisation phase. (i) **Effective Identification and Provision of Technical Support** relates not only to the build/implementation of the system but also to provide the right systems training and support. The ICTA-PgM took a prominent role in assisting the MO to identify and devise the necessary technical support. (ii) **Early Identification of Negative Attitudes** were identified and managed. The MO used his experience and knowledge of working in the health sector to identify and analyze the diverse set of issues, rank them, and address each one. The CL supported the MO as a mediator. (iii) **Deep Understanding of Domain Culture**. The MO and ICTA-PgM created strategies for clear and effective communications to fit various subcultures. For example, the ICTA-PgM recognized that it was more effective when ideas were presented to the medical fraternity by somebody who belongs to the group. The CL’s deep understanding of the conflicts between different groups of staff in the healthcare system helped him to act as a mediator and mentor. (iv) **Capitalization of External Support Networks**. The MO worked closely with the CL to identify and capitalize on these relationships and connections in planning, strategizing, and executing the technology-enabled transformation of the hospital. (v) **Effective Composition of the BPM Team**. The MO established two sets of cross-sectional teams: the core team, directly involved in transformation activities whose key focus was to identify staff concerns and support the MO in handling those issues; and the support team, to provide back-up. (vi) **Organization of Field observation** visits to other district hospitals that had attempted similar system implementations helped in motivating the staff to understand the potential of re-engineering and ICT to identify the weaknesses in the implementation strategies adopted by those hospitals. The MO closely coordinated with the ICTA-PgM and the software developer to customize the HHIMS to suit the diverse users of the Dompe’s healthcare processes (i.e. Doctors, Nurses, Paramedics, Pharmacy staff).
One (1) Entrepreneurial leadership action was observed in the problematisation phase. (i) The MO engaged in Robust Process & System Design with the support of his staff and the CL. The MO initiated a number of innovative process improvements, which included changes to the physical layout of the hospital to improve the workflow, re-designing the patient appointment process, and removing manual writing tasks by the doctors.

4.2 Leadership actions observed within the ANT-Interessement phase

The focal actors used a variety of interessement strategies in this phase to motivate the actors leading to the alignment of interests. Fig. 3. Illustrates how each focal-actor contributed to the identified leadership actions and the coding references (i.e. the number of supporting codes). Each leadership action is explained below.

![Fig. 3. Leadership actions in the Interessement Phase](image)

Six (6) Operational leadership actions were observed in this phase. (i) Training & Development. Both inbound and outbound training and development programs were organized by the MO and CL to assist staff in developing their technical abilities for the continued use of the new processes and systems, build team attitudes, bridge gaps between different social and cultural groups, and bind them as a single unit. IT training was designed to suit the requirements of the users. (ii) Use of Rewards & Recognition. An inclusive environment for staff was created in order to align their interests with those of the organization by using methods like competitions, social and cultural events, awards and certificates, allowing for overtime payment, and by creating champions. The ICTA-PgM encouraged the BPM champions (from within the hospital staff) by getting them formal contracts and promoting their efforts in the state healthcare sector. (iii) Gradual Implementation. Considering the potential resistance to change, the MO planning the BPM implementation followed an incremental approach to avoid overwhelming staff with new processes and technology. For example, not all patients were registered immediately. (iv) Enforcement of Authority & Regulations. This was applied to ensure adherence to rules regarding resource constraints, such as internet access. (v) Continuous Evaluation of Staff Attitude. This was used to identify staff...
issues, potential resistance to change, and to gauge their attitudes towards the BPM initiative. (vi) Development of Shared Vision. This was ensured by the MO providing a “very clear road map”.

Eight (8) Enabling leadership actions were identified in the interessement phase. (i) Providing Active Staff Support. The MO organized highly valued around-the-clock support to staff by actively engaging with them to help overcome their technical fears and attitudes. (ii) Formal Approvals & Support from Authorities. A good rapport was brokered with senior authorities to secure their support and approval for speedy implementation of planned activities and to bypass rigid bureaucratic requirements. The strategy has also helped control resistance. The CL gained the much-needed financial support from local industry for the infrastructure development. (iii) Team Building. The MO realized the importance of a coherent team-based culture and utilized staff with positive attitudes to build and develop team culture, allowing decision-making through team consensus. The CL also contributed to the positive team culture by engaging with the staff via team building exercises. (iv) Effective Communication. Open communication channels were created to clearly convey the vision and aims of the initiative and to identify issues and their solutions, such as the end goals. (v) Effective Information Accessibility. This was enabled by the MO for all staff for all relevant information through methods like meetings and discussions to help continuous improvement of processes and consideration of staff input when creating process guidelines. (vi) Creating Feeling of Ownership. The MO created an environment of shared ownership and responsibility of the new system, by, for example enabling staff to describe their processes to visitors. (vii) Active Staff Engagement in Process and System Design. This captured how staff suggestions and involvement were encouraged in every step of developing the processes, ensuring the cooperation of the diverse stakeholders. (viii) Exhibiting Trust in Staff Abilities. The MO exhibited his trust in staff’s abilities by delegating the responsibilities and work according to their knowledge and skills.

One (1) Entrepreneurial leadership action observed in the interessement phase was the Use of Peer-Bonding. To develop hospital-wide positive attitudes, the MO opted to use staff with positive attitudes to influence staff who were negative and resistant to change. Peer groups were formed where competent members helped those who were less competent.

4.3 Leadership actions observed within the ANT-Enrolment phase

An effective interessement strategy leads to enrolment from the actors to form an irreversible network. The focal actors used the following strategies in this phase to stabilize the network. Fig. 4 illustrates the leadership actions and the coding references (i.e. the number of supporting codes). Each leadership action is explained below.
Only one operational leadership action was observed in the Enrolment phase. Close monitoring was used to ensure that staff were not worried about using the newly implemented processes and the HHIMS system and were supported if mistakes were made.

Enabling leadership actions observed in this phase include the following. (i) Continuous Feedback & Alignment strategies were used to gauge staff feelings and attitudes regarding their assigned tasks, feedback was collected by independent trainers and analyzed by the MO to identify any negative patterns and to develop corrective actions. (ii) Review meetings were conducted in the form of brainstorming sessions with the staff and shortages of equipment were overcome by staff suggestions.

A higher focus was on the entrepreneurial leadership actions in the enrolment phase. (i) Process Awareness comprised of interessement strategies to get staff actively engaged in BPM activities. Open channels of communication were effective in accomplishing a high degree of awareness of the processes and how changes lead towards improvement in efficiency and performance; both staff and patients were happy with the new system. (ii) Process Innovations. As use of the processes became popular and improved, there were further improvements in the process design and system features through staff feedback and suggestions. As well, support from the ICTA PgM was utilized, including the use of bar codes, autofill forms, international medical classifications like the ICPC2¹ standard, and the village database. (iii) Team Work emerged as a result of continuous training, development, and bonding programs, and led to the emergence of complex adaptive systems in which staff made independent decisions leading to further improved performance.

The effective operational, enabling, and entrepreneurial leadership actions taken by the focal actors produced the following Adaptive outcomes. (i) Positive Attitude towards Processes and ICT System. The value of re-engineering was appreciated by the staff, and it reversed their negative attitudes and created a positive impact on daily job routines. Staff started to apply process thinking in diverse areas such as the injection rooms and stores. (ii) Improved System Usage. The training and peer bonding strategies were effective in developing staff confidence in their technical skills leading to

¹ http://www.who.int/classifications/icd/adaptations/icpc2/en/
positive impact on their use of the new system. (iii) **Intention to Apply Process Knowledge.** The trust and confidence gained by the staff through continuous capacity-building activities encouraged them to get actively involved in suggesting new and innovative ideas to improve processes. This showed the irreversible nature of staff attitudes towards the improvement process.

### 4.4 Leadership actions observed within the ANT-Mobilization phase

A network reaches the mobilizing phase when the actors reflect the extensive acceptance of a devised strategy or solution, exhibit the spokesperson behavior in representing the network, and the focal actor cements the alliance by using appropriate methods to ensure irreversibility [17]. The MO’s and ICTA-PgM’s main objectives were to improve the patient care services and implementation of HHIMS for the eHealth records program using both the human (staff) as well as the non-human (processes and HHIMS) actors.

As shown Fig. 5, there was no operational or enabling leadership actions observed in the mobilization phase of this case study. The **Entrepreneurial leadership** observed in the Mobilization phase was twofold: (i) **Emergent Innovative Actions** and (ii) **Self-Organizing Attitude.** The emergence of innovative and self-organizing behavior by staff for the continuous improvement of the system was a result of the positive culture of empowerment created by the focal actors (by moving away from a ‘command & control’ approach) and the increasing reputation of the hospital.

**Five (5) different Adaptive Outcomes** were observed in this phase. (i) **Prestige.** The national recognition received by the hospital and the MO’s recognition of staff achievement helped in creating pride. ICTA ensured that Dompe was used as the role model for other hospitals. The visible results in process efficiency and improved production in all areas of operations had a (ii) **Positive Impact on Performance** of daily operations that has changed patients’ attitudes, helped staff move away from old, unproductive practices, and brought order to the earlier chaos in the hospital. (iii) **Process Acceptance** was also a critical outcome. Because the initiative used the staff domain knowledge, it was sustainable and widely accepted with pride by the staff. The MO made use of his domain knowledge to drive the improvements and encouraged staff to...
do the same. (iv) Spokesperson’s Legitimacy explains how an effective alignment of actors’ interests will result in the acknowledgment of the focal actor’s status as the legitimate spokespersons. The MO achieved this by his approach to re-engineering and maintaining the processes and system. (v) Irreversible Change pertained to ensuring that the re-engineered processes were embedded in daily operations and that the entire system was productive, efficient, stable and sustainable. It was critical to make sure that there was no going back and that the change was permanent.

4.5 Contextual factors influencing leadership action across the translation process

The analysis identified a variety of contextual factors influencing leadership actions across each stage of the translation process (see Table 2 for a summary overview).

| Table 2. Contextual factors and stages of Translation Process |
|---------------------------------------------------------------|
| **National Vision & Program of Work** | **Local Influences** | **Performance Pressure** | **Political Influences** | **External Recognition** | **Exploitation & Corruption** | **Resistance to Change** | **Dilapidated Conditions** | **Healthcare Culture** |
| **Problematisation** | 9 | 5 | 5 | 4 | | | | |
| **Interessement** | 3 | 1 | 10 | | | | | |
| **Enrolement** | | | | | | | | 12 | 10 |
| **Mobilisation** | | | | | | | 4 | |

In the Problematisation phase, four (4) contextual factors were identified. (i) The fact that the initiative was related to a National Vision and program of work helped to kick start the work and also influenced the leadership actions. For example, the Enterprise System Approach adopted by the focal actors was directly related to achieving the national strategy. (ii) Local influences. Staff approaching their retirement stage and some local politicians were quite resistant to the proposed changes, but the involvement of the local community and religious entities led to positive outcomes. The leadership actions—Robust Process & System Design and Early identification of Negative Attitudes—were influenced by the local factors, and lack of understanding of the cultural context would have resulted in major problems. (iii) The government’s vision for the healthcare sector and the history (with initial systems implementations by ICTA) of failure put Performance Pressure on the leaders. ICTA’s strategy to provide the required technical resources and funding for Dompe’s BPM initiative was a direct outcome of the performance pressures in ICTA. (iv) There were also a number of negative Political Influences.

Three (3) contextual factors were influential in the Interessement phase: (i) External Recognition of the first ever successful eHealth system within the national healthcare system by national authorities and the public sector healthcare community. This had a major positive influence on staff changing their opinion about the ICT-enabled BPM endeavour at Dompe. (ii) Exploitation and Corruption were mentioned by the participants in relation to a parallel process invented by the local trishaw drivers, who charged patients for arranging the appointments to reduce the long hours spent waiting in queues, and provided financial incentives to hospital staff. (iii) Resistance to change persisted amongst some staff members and the national medical association also tried
to influence the internal staff to not accept the proposed ICT-enabled BPM. The Government Medical Officers’ Association (GMOA) argued that the proposed process changes would increase the doctors’ workloads and adversely affect the noble image of the profession. However, the provisioning of latest laptops to the doctors by ICTA refuted GMOA’s influence, doctors felt rewarded and ignored the workload concerns. Two (2) contextual factors influenced the leadership actions in the Enrolment phase. (i) **The Dilapidated Conditions.** The contrast between the ad hoc operations and the dilapidated infrastructure prior to the transformation and the new processes and IT system helped demonstrate the positive value of the improvements to the staff. (ii) A key influencing factor was the matching of the system with the Healthcare Culture in the country. As mentioned previously, the healthcare workers have a distinct way of thinking and perception towards the ICT systems [32, 33], therefore, the design of the system had to incorporate the cultural issues, such as providing support, incorporating staff feedback, and enabling self-organisation.

**External recognition** was the main contextual factor identified in the mobilisation phase. The acknowledgment of service excellence by the President of the country and increased recognition from colleagues from other hospitals boosted the staff confidence and helped stabilise the network.

5 **Discussion and Conclusions**

As discussed earlier, previous studies have identified many internal and external obstacles that could restrict organizations in achieving the intended potential of BPM and highlighted leadership as one of the critical success factors for BPM [6, 34]. However, the current research on BPM (in general) provides very limited understanding of the nature, definition, and properties of leadership in Business Process Management initiatives, especially in the public sector, and developing countries. This study present a series of leadership actions by different leaders (focal actors) according to the core phases of ANT translation process, and how contextual factors may influence them. A total of 36 leadership actions across the phases of Problematisation (13), Interessement (15), Enrolment (6), and Mobilization (2) were identified with (9) contextual factors. The case study findings explained the nature of leadership actions that led to the successful implementation, and sustainability of BPM in a public hospital as well as creating an organization-wide process-centric culture.

The selection and analysis of a real-life situation where BPM is used to achieve a national agenda of citizen well-being contributes to the understanding of the public-sector BPM domain by defining the nature and role of leadership in effective handling of the complexity dynamics associated with BPM initiatives. Despite the specific and narrow scope of the study, we argue that the nature of the leadership actions can provide the basis for the study of leadership-change in any socio-technical phenomenon. According to Wacker [35], correct conceptualization and definitions of constructs is the first step towards building a good theory before statistical verification. The leadership constructs and contextual influences presented in this paper can be operationalized and tested in future research. The conceptual framework and findings presented in this study can be quantitatively validated by measuring the statistical significance and correlations.
between leadership actions as independent variable and adaptive outcomes as the dependent variables with moderating effect of contextual factors. This paper is part of a larger program of study, and as the next step, a comparative analysis of failed and successful public sector BPM initiatives and the role of leadership is planned for the future.

This study therefore contributes to ANT research by confirming the suitability and usefulness of the Translation Process to explain leadership and network interactions in socio-technical process improvement approaches. This study was also able to show the use of CLT to explain the leadership actions in a socio-technical phenomenon and how a balanced use of operational, enabling, and entrepreneurial leadership created the adaptive space leading to irreversible change and self-organization. The results also confirmed that a high degree of entanglement [27] exists between operational and enabling leadership and shows it can have a positive impact on adaptive outcomes.

The findings of this paper also have considerable practical significance. The detailed identification of leadership actions in a highly successful transformation will assist national IT agencies in developing countries to address the critical need to develop robust leadership capabilities to overcome chronic BPM failure rates. The outcomes of the study can act as a guide for senior management of BPM initiatives in the public sector to lead successful BPM implementations and as a useful framework for designing leadership capacity building for BPM initiatives. The net results can assist developing countries to achieve the socio-technical and financial benefits expected of the ICT-enabled BPM initiatives to provide government services to the citizens in an efficient and effective manner.

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