COMPLIANCE AND ENFORCEMENT CHALLENGES: A CASE OF THE NATIONAL BUILDING REGULATIONS' PROCESES IN SOUTH AFRICA

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Abstract

This paper discusses the compliance and enforcement processes of the National Building Regulations of South Africa. These processes are administered by the National Regulator for Compulsory Specifications (NRCS) in terms of the National Building Regulations and Building Standards Act 103 of 1977 (The Act). The objective was to investigate the how the business processes by the NRCS have enforced Building Control Officers at the Local Authorities nationwide to comply with the safety of buildings for building occupants or end-users. The investigation was largely motivated by the high number of injuries, deaths and/or human lives affected and reported due to collapsing and defective buildings. It was a case study based on disasters occurred and reported at various Local Authorities, in private residential homes, government-owned buildings, abandoned and commercial buildings, such as shopping malls. This study applied the interpretive approach underpinned by qualitative methodology where interviews and questionnaires were used to collect data from affected stakeholders. The stakeholders ranged from building owners, prospective building owners and/or building occupants, built-environment practitioners, Local Authorities' Building Control Officers and the Regulator. In gathering the data, it was ensured that it was done in an ethical manner and for the intended study only. The empirical findings revealed that there was a critical need for business process review and strategy shifts that advance objectivity and benefits to compliance, visibility and awareness of regulatory process. The output is a proposed re-design NRCS business processes that can effectively enforce compliance of the building regulations of South Africa.

Keywords: Building Regulations, Building Standards Act, Compulsory Specifications, Control Officers, Local Authorities

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1 Introduction and related work

The objective of this paper is to determine the factors contributing to the effectiveness of the national building regulations on the built-environment to ensure buildings are of safety, healthy, meet environmental requirements and suitable for human occupancy. The research was driven by affected stakeholders' perceptions and experiences in built-environment. Furthermore, the investigation was based on the following:

- How do business processes assist in implementing the provisions of the National Building Regulations and Building Standards Act 103 of 1977 (hereafter called "the Act") to ensure buildings are safe and habitable for humans?
- In terms of the Act, how do different management processes enable the Regulator to deliver on its mandate and ensure end-users or building occupants' safety is assured when they enter buildings?
- Why do buildings collapse when there are building regulations.

The following are some of the cases that have suggested challenges of the buildings approval core business processes in the identified countries, i.e.

- "Tongaat Mall foreman pleads ignorance - July 24, 2014 at 02:27pm – IOL News."
- "Egypt building collapse kills 17 people – November 25, 2014 – BBC Online news."
- "Egypt apartment building collapse kills 23 – January 16, 2013 – Theguardian online news."
- "Bangladesh building collapse toll hits 500 – May 1, 2013 - The Daily Telegraph online news."
- "Brazil building collapses traps 15 – August 27, 2013 – News24 online news".

Given the above cases, related scholarly work on the compliance and enforcement business processes of building regulations was reviewed to establish whether the existing challenges within the built-environment had been addressed before. It was also to gain the general understanding of the phenomenon and also to determine whether the current processes are

obsolete and inadequate or not. Preliminary investigation on National Building Regulations by Watermeyer and Milford, (2004) outlined that administrative processes and procedures of building regulations were promulgated to ensure that functional requirements within the built-environment are met for safety of buildings, thus substantiating the need to revise a framework that makes use of business process to effectively and efficiently implement the provisions of the Act. Given Watermeyer and Milford statement, it is arguable that business process re-engineering (BPR) is one of the techniques universally accepted as remedies to all problems faced by organizations, including challenges of processes and systems inefficiencies as alluded to by Atreya (2012). Atreya (2012), Thong (2014), Marija and Kiril (2012) further argue that BPR is technique that can successful measure and bring about radical changes (i.e., under political and social pressures), improved performance and able to achieve results. Furthermore, Sommerville (2012) also argues that system, including both hardware and software components, define operational processes within the parameters of, and limited to, the functions of the organisation. Thus, drawing from Sommerville, it is arguable that processes drives systems development and as such systems facilitates process implementation. Another study by Windapo and Rotimi (2012) outlined the adverse impact the lack of implementation of efficient and effective processes of the Building Regulations had on building structures, its infrastructure and to the occupants of various types of buildings, as well as the economic impact.

Therefore, a review of the core business processes of the National Building Regulations of South Africa in general was undertaken to gain understanding of the phenomenon. One of the processes was thus engaged to verify its effectiveness in ensuring the safety of buildings and consequently protecting the end-users, building owners or building occupants. Laubscher (2011) in his study of the origins of the building regulations in Southern Africa pointed out that, due to additional health requirements being prescriptive on certain aspects of buildings and all and building infrastructure, catastrophic events had proven to occur where the regulatory processes are proven to be ineffective. To understand and interpret the phenomenon, a problem conceptualization was developed (see figure 1) that led to processes verification using process mapping and modelling to determine the effectiveness business processes that are to ensure safety of buildings.

Figure 1. Problem Conceptualization

Given the Figure 1 above there is a problem with this business process as it is internalized to the administrative objectives of the NRCS in exclusion of 3 other stakeholders, namely: (a) the Building Control Officers, (b) Built-environment Practitioners – Regulated parties in terms of "the Act," and (c) End-users–building owners or occupants whose safety must be ensured against defective or structurally unsound buildings. The problem conceptualization is thus described as follows:

- The process outlines 4 (four) key activities of national building regulations business unit that are concluded without reflecting any direct impact on the end-user in ensuring the safety of buildings and that of building occupants

- No sanctioning sub-process is outlined in cases where non-compliance to any of the applicable Building Regulations are identified
- The process above does not show any stakeholder engagement sub-process.

Given the above description, it is thus arguable that there are gaps in the business processes which have resulted in the effectiveness and inefficiencies of the Building Regulations and "the Act" in regulating the built-environment. Although there is limited literature on building's regulatory business processes, it can still be deduced that there are gaps in the current business processes of national building regulations in South Africa.

2 Methodology

2.1 Unit of analysis

This paper is a case study based on 4 (four) stakeholder groups affected by "the Act" and its Building Regulations categorised in Levels 1 (one) to 4 (four) as fully described below in Table 1. Stakeholder representatives were randomly selected from various stakeholder groups with reference to the current study. The approach provided the tools to analyze the built-environment within the context of National Building Regulations (Baxter and Jack, 2008).

Table 1. Stakeholder Categories and Referencing

Category	Stakeholder reference
Level 1	Building Owners / Prospective Building Owners / Building Occupants
Level 2	Built-environment Practitioners - architects, builders, engineers, legal representatives as appointed by the prospective or the building owner;
Level 3	Local Authorities' Building Control Officers - represented by the Building Control Officers
Level 4	NRCS - The Regulator of the National Building Regulations - the National Regulator for Compulsory Specification

In cognizance of the problem conceptualization, an interactive approach by means of one-on-one interviews with stakeholders at various levels as referenced in Table1 above was used. Forty (40) interviewees, 10 in each level participated voluntarily. The method gave tremendous insight into the regulations and the built-environment. All participants in the data collection were identified from the built environment's sector and its business' sphere. The methodology was aimed at:

- Assisting in understanding and interpreting the catastrophic incidents occurring within the built-environment and building industry within the ambit of the National Building Regulations;
- Re-evaluating the status quo of the implementation of the National Building Regulations; and
- Developing interventions where gaps and inadequacies are identified in the study, resulting in the recommendations for re-designing of core business processes of the National Building Regulations.

This interactive approach was relevant and appropriate for the intended study to establish the perceptions and experiences of all affected stakeholders on the understanding and implementation of the core national building regulations' business processes within the built environment in South Africa.

The data collected was thus verified based on the following factors at each stakeholder level (a) knowledge about the Building Regulations, (b) generic and technical understanding of the application of the Building Regulations, (c) highlights the benefits of the Regulations, (d) highlights the gaps and the limitations of the Regulations and regulatory processes, (e) proposes the mitigation where shortcomings are identified and enhances the current status quo where quick wins are highlighted, (f) highlights the impact of compliance as well as that of non-compliance; and (g) flags the areas of improvement.

2.2 Ethical consideration

In conducting this study, consideration and adherence were given to ensure ethical conduct by all participants such that that there is no adverse impact on all affected stakeholders respectively and/ or institutions or parties they represented. Permission was also obtained from the NRCS as the Regulator of the Business processes being studied and analyzed.

3 Findings and discussions

The analysis of data was based on the responses received from all 4 (four) stakeholders at all levels affected by "the Act" and its building regulations who were randomly selected to answer the questionnaire based on the problem statement already identified, of which the current study is based on. This paper further discusses the impact of the implementation of national building regulations' business processes in ensuring that buildings are safe, healthy, and environmentally friendly and are of sound quality for human occupancy. All selected participants proved to have been affected by the regulations of building in one form or another as outlined and defined in Table 1 above. It was also established during the interviews that they understood how the regulations impacted on their lives when the industry is regulated. The following findings were acknowledged:

- The respondents displayed a generally low level of awareness and understanding of the regulatory role of implementation of National Building Regulations. This primarily is projected from the building owners' input not recognizing the government's imperative in ensuring safe buildings, and further to consider the government's imperative as an essential and a basic benefit to citizens at large.
- Communication channels between the stakeholders and the regulator were inadequate are based on internal business processes and systems which are already ineffective.
- There are inconsistencies of the enforcement of the legislation by various local authorities.
- Significant differences were recorded by the respondents at different stakeholder levels in terms of thorough understanding of the regulatory dynamics in ensuring the implementation of the Regulations; this was indicated as crucial.
- A high level of non-responses was noted where stakeholders at various levels repeatedly stated that they were not aware of various regulatory and business processes. This highlights the importance of the need to sensitize all citizens of the critical nature of the legislation, and how it impacts on all citizens day-to-day lives as all citizens are automatically occupants to one form of building or another.
- Respondent at all levels suggested that implementers of the building regulations must ensure that their business processes and systems promote compliance to the legislation to support the safety, health and environmentally friendly buildings for human occupancy, as intended.
- The stakeholders interviewed agreed that the regulator must periodically assess the understanding of the stakeholders towards the implementation of building regulations to address perceptions of the regulatory business processes and systems in relation to the legislation.
- The NRCS – NBR Business Unit must use process mapping and process modeling in the design and redesign of processes and systems management.
- It was confirmed that NRCS – NBR Business Unit must collaborate with customers, stakeholders and end-users that have had no understanding of its business processes - upstream and downstream processes – to avoid the problem of miscommunications, gaps, redundancies, workarounds, rework loops and waste.

In view of the results from data analyzed and subsequent recommendations, a redesigned of the core business processes of the building regulations to effectively and efficiently regulate the built-environment is proposed (Figure 2). It is thus recommended that the NRCS – National Building Regulations Business Unit redesigns its core business processes of the National Building Regulations of South Africa to outline and include the following: (a) Stakeholder Liaison, (b) Introduce the sanction sub-process for identified non-compliances to "the Act" and its building regulations, and (c) State the output of the entire business process which would be safe, healthy buildings that meet environmental requirements and are suitable for human occupancy.

4 Conclusion

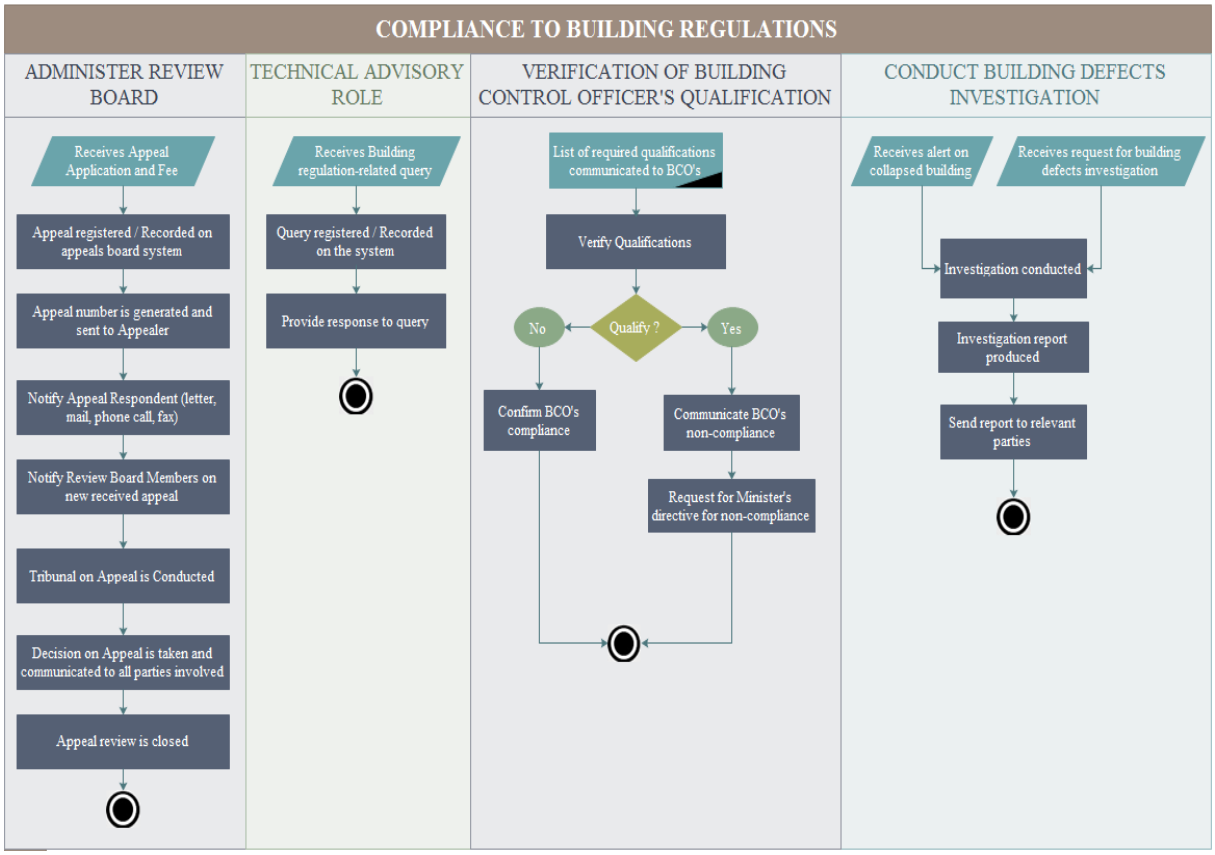
One of the objectives of this paper was to propose re-designed core business processes of the National Building Regulations of South Africa as outlined below in figure 2. The latter was alluded to earlier in this paper to ensure effective compliance and enforcement of regulations within South Africa's built-environment. The paper argues that the status of the outcome of implementation of redesigned core regulatory business processes will determine the stakeholders' satisfaction or dissatisfaction. Within the built-environment, stakeholders may vary from the building owner/occupant or end-user, Building Control Officers from Local Authorities, the built-environment's practitioner to the NRCS – NBR Business Unit. Implementation of redesigned business processes by the NRCS – NBR Business Unit resulting in the effectiveness and efficiency in regulating the built-environment ensuring the safety of buildings. Since the purpose of the regulatory processes is to ensure that the built environment is effectively and efficiently regulated, instances of non-compliance should be remedied with alternatives to ensure that building occupants are protected from defective buildings.

5 Recommendations and further research

In general, the respondents, at all stakeholder levels, in the current study expressed that the National Building Regulations and building standards within the built environment face major challenges and obstacles. The general lessons learned from the analysis conducted as part of the study were seen in the following key points, which are significant to the future of safe, healthy, environmentally friendly buildings of sound quality for human occupancy:

- Stakeholder consultations in the core regulatory business processes' development and/ or redesigning in line with the relevant building regulations;
- Stakeholder awareness forming part of the core regulatory business process for all affected stakeholders at all levels;
- Uniformity in understanding, interpretation and implementation of the building regulations and its core regulatory processes;
- Awareness and understanding of the regulatory framework in line with the Act; and
- Adequate support measures and robust monitoring tools, which will lead to commitment to the effective implementation of the Regulations by the regulators and enforcers of the Act.

Figure 2. Re-designed NRCS – NBR Business Unit's regulatory business processes



With the limited and insufficient studies conducted around Building Regulations and the implementation of the core regulatory business processes thereof; it is concluded from both Laubscher (2011) and Watermeyer (2010:6) that the future debate should focus on redesigning of regulatory business processes. That will enable uniformity in understanding, interpretation and implementation of the legislation, i.e. the Act, to ensure that buildings are healthy, safe, meet environmental requirements and are of sound quality for human occupancy. Future research and developments should further focus on:

- Inclusion of stakeholder consultations and awareness as a sub-process in the re-designed processes;
- Clearly in re-defining the roles, responsibilities and accountability of all affected stakeholders, including the end-user's benefactor in the administrative Charter where the legislation may not be promptly amended;
- Analyzing the Regulations, regulatory framework and business processes;
- Evaluating the effectiveness of the role which the Building Regulations, and its business processes, can play in ensuring the safety of building occupants, preventing collapsing of buildings and defective buildings;
- analyzing the dynamics underlying the strategic repositioning of stakeholders at all levels within the built-environment, as a result of Building Regulations and effective implementation of its core business processes; and
- Broadening the application of the core regulatory business processes by analyzing other regulated environments, e.g. the Electro-technical Industry, while remaining mindful that the simple adaptation of the redesigned core business processes within the built environment is to address the problem effectively.

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