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## A WORK SYSTEMS VIEW OF UNPLANNED BUSINESS PROCESS CHANGE: THE CASE OF #FEESMUSTFALL AT A SOUTH AFRICAN UNIVERSITY

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### ABSTRACT

**Aim/Purpose**      Improving or changing business processes is one of the most important roles for Information technologies functions. Yet, most organizations struggle with planned process change and even more with unplanned change. There is little support from research as the dynamics of planned process change is understudied and unplanned process change is seldom researched.

**Background**      This paper describes the impact of unplanned business process change from a systems perspective. The #feesmustfall student protest movement, which began in 2015, and affected Universities throughout South Africa provides the context.

**Methodology**      An interpretive abductive case study at a South African university used Steven Alter's Work System framework to describe the unplanned business process change that occurred due to the #feesmustfall student protest movement.

**Contribution**      Theoretically, this paper demonstrates the practical use of Alter's work system framework to analyze unplanned business process change. Practically, it describes and explains the impacts of the change which may be useful to executives or administrators responsible for operational systems within organizations.

**Findings**      During unplanned business process change, change management, staff training, customizable technology and strategic fluidity and focus were found to be im-

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	portant. Unplanned business process change results in all elements of the work systems and its environment changing, even resulting in changed products and customer behavior.
Impact on Society	If organizations are more aware of the impacts of unplanned process change they will be better equipped to control them.
Future Research	Future action research studies on unplanned business process change could suggest actions for manager's dealing with them.
Keywords	business process management, work system theory, systems thinking, unplanned change, #feesmustfall

## INTRODUCTION

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Improving business processes has been expressed as the top business expectation of CIOs (Kark, White, Briggs and Shaikh, 2017). In support, research literature exists prescribing how these “planned” business process change initiatives can result in improved outcomes. However, while there are prescriptive statements on how to change business processes for the better, rarely is there a description or explanation of how exactly business processes change and the dynamics involved, before, during, and after the change (Forster, 2006). Alternatively, little is known regarding the phenomenon of “unplanned” business process change which, although acknowledged as the obvious flip side of planned change, is seldom interrogated or researched with rigor (Alter & Recker, 2017). According to Lyytinen and Newman (2008), “the majority of change studies treat change as a simple, linear progression where a new system is designed, adopted, and modified in step-wise manner” and where the dramatic effects of change, referred to by Drummond (1996) as “Mad Hatter’s Parties”, are often glossed over in a clinical “white-boxed” approach to process improvement (p. 589).

When discussing methods of business process change, Alter (2004) has suggested that “the work system approach is one of many possible foci for extending the surprisingly limited use of systems thinking in the IS discipline” (p. 3). Alter and Recker (2017) define a work system as “A system in which human participants and/or machines perform work (processes and activities) using information, technology, and other resources to produce specific products/services for specific internal and/or external customers” (p. 50). Alter, considers how the IT-reliant work system as a whole, and not just the technology, is impacted by the phenomenon of unplanned business process change. Alter (2013) refers to unplanned change from a Work System Theory perspective in terms of unanticipated, unplanned or emergent change and attributes its causes to non-conformance to specifications, human intervention or workarounds such as “fixes” or adaptations.

However, unplanned change can also be triggered by external forces or events; events beyond the control of the system or organization and can often spawn spontaneous, knee-jerk responses that lead to radical or revolutionary change (Porras & Robertson, 1992). According to Colville, Dalton, and Tomkins (1993), “One rarely fully appreciates or understands a situation until after it has changed” (p. 550). Starting in October 2015, a dynamic and complicated socio-political phenomenon of unprecedented dimensions engulfed higher educational institutions throughout South Africa. Starting at the University of the Witwatersrand in Johannesburg, the phenomenon took the form of a spontaneous, and remarkably well organized, student protest movement using the hashtag ‘fees-mustfall’. Within weeks it spread nationally and, in several cases, threatened to bring the academic program to its knees (Hodes, 2016).

It is therefore within the context of revolutionary change spawned by the unexpected #feesmustfall social movement that the question posed by this study arose; specifically, to investigate what unplanned (unanticipated) business process change occurred at a University as a result of the #fees-mustfall student movement, how did it occur, and what were the effects? Traditionally, the Infor-

mation Systems approach to research has been to focus narrowly on the IT Artefact or technology alone (Alter, 2003), in contrast this study looks at the broader system.

## LITERATURE REVIEW

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An aphorism attributed to Heraclitus (540-480 B.C.) and often used to describe the inevitability of change, states “Nothing endures but change” (Burke, Lake, & Paine, 2008). This perceived inevitability of change assumes that it can be planned for or anticipated, however, change can often be unpredictable and unexpected and ironically there are occasions when “planned change must be undertaken amid unplanned change” (van Woerkum, Aarts, & Van Herzele, 2011, p. 145). Lewin (1951) said that “you cannot understand a system until you try to change it” (Schein, 1996, p. 34) and proposed a three-stage change process; unfreeze, change and refreeze, as a means of managing the journey through (planned) change (Forster, 2006). Change can be “episodic”, occurring at manageable (planned) intervals or change can be “continuous”, meaning it “never starts because it never stops” (p.381) and therefore is harder to manage (plan) (Weick & Quinn, 1999). To understand the impact of business process change, and in particular unplanned business process change, on the organization, one must first understand the characteristics of a business process.

### *BUSINESS PROCESS CHANGE*

Davenport and Short (1990) define a business process as “the logical organization of people, materials, energy, equipment and procedures into work activities designed to produce a specified end result” (p. 3). They go on to describe business processes as having two fundamental characteristics. Business processes deal with customers and Business processes tend to cross organizational boundaries (Davenport & Short, 1990). Sharp and McDermott (2001) devote an entire chapter in their book to discussing the definition of a business process. They begin with the bold statement: “No Definitions, but Lots of Opinions”; later they compromise with “we conclude that a process is a collection of activities (or steps or tasks or whatever) that is a way to get something done” (p. 38) and finally; they commit to a “business process is a collection of interrelated activities, initiated in response to a triggering event, which achieves a specific, discrete result for the customer and other stakeholders of the process” (p. 56).

An observation vis-à-vis the existing body of business process change related academic research literature is that much of it is atheoretical, suggesting a paucity of theoretical models or frameworks capable of offering guidance to business process change initiatives, planned or unplanned. Business Process change tends to be approached from a techno-centric or socio-centric rather than socio-technical perspective (Sarker & Lee, 2002). A socio-technical approach to the study of business process change facilitates the broad analysis of emergent, complex and often conflicting business process change characteristics (Sarker, Sarker, & Sidorova, 2006). More recently, reference to the socio-material perspective in the study of business process change has been mooted. Socio-materiality adopts the view that it is impossible to separate technology from the societal aspect of organizational systems (Boell & Cecez-Kecmanovic, 2015; Orlikowski & Scott, 2008)

### *STUDENT PROTEST ACTION AND CHANGE*

This study focuses on unplanned (unanticipated) business process change which occurred at a University as a result of the #feesmustfall student movement. Demands by students included free education, reduction of student debt, insourcing of general workers, decolonization of the education system and transformation of university staff compositions (Langa et al., 2017). The movement was initially widely supported but this changed, especially when protests started turning violent (Langa et al., 2017). Eventually, after weeks of sporadic, sometimes violent, unrest at campuses throughout South Africa, Government announced that tuition fee increases would be waived for 2016 and that additional funds would be allocated to the NSFAS. It could be argued that had these protests not occurred, Government might not have responded at all to repeated calls for financial reform of the

higher educational financial paradigm (Langa, 2016). The protests resulted in the announcement at the end of 2017 of fully subsidized higher education for students from poor and low income families (Bitzer & de Jager, 2018). Within universities themselves, the knock-on effect of protest action often proved less benign, resulting instead in unplanned, rapid and disruptive change to administrative, operational and support business processes. The degree to which business processes at various Universities were impacted differs.

South Africa is not unique in terms of student protest resulting in change. There have been other similar movements globally. In Africa student protests played a vital role in democratisation (Fomunyan, 2017). In France, the 1968 protest resulted in “Bloody Monday”. The Velvet Revolution of 1989 in former Czechoslovakia. In China, the student protest resulted in the Tiananmen Square Massacre. The United States of America, had the Harvard University “Butter Rebellion”, Canada, had violent student protests in 2004 and 2012. In 2011 students in Chile staged a seven months long protest which led to a change in the public education agenda (Fomunyan, 2017).

### ***BUSINESS PROCESS CHANGE THEORY***

Kettinger and Grover (1995) define a theory as “a set of tightly interrelated constructs that explain a phenomenon or predicts an outcome” (p. 14). They define Business Process Change Management as “a strategy-driven organizational initiative to improve and (re)design business processes to achieve competitive advantage through changes in the relationships between management, information, technology, organizational structure, and people” (Kettinger & Grover, 1995; Kettinger, Teng, & Guha, 1995).

A socio-material, socio-technical theory which contrasts itself to other more prescriptive, techno-centric, process-bound change related theories, is Alter’s (2003) Work System Theory. It facilitates a more descriptive approach to the analysis of elements within a work system (Sewchurran & Brown, 2011). Alter and Recker (2017) define a work system as “A system in which human participants and/or machines perform work (processes and activities) using information, technology, and other resources to produce specific products/services for specific internal and/or external customers” (p. 50).

An alternative theory, based on a combination of Work System Theory and the earlier Business Process Change model proposed by Kettinger, Teng, and Guha (1997), was developed by Mansar & Reijers (2005) however, there remain fundamental differences. Alter’s (2003) Work System Framework includes reference to Participants, Customers and Infrastructure whereas the Business Process Change model simply refers to People and excludes Infrastructure. It does however, include the Management element which Alter’s (2003) Work System Framework does not.

### ***THE WORK SYSTEM FRAMEWORK***

Through abductive reasoning, the Work System Framework was ultimately chosen for this study. It is designed around business rather than IT concerns and consists of nine elements: Customers, Products & Services, Processes & Activities, Participants, Information, Technologies, Infrastructure, Environment and Strategies. The following four elements: Participants, Information, Technologies and Processes & Activities make up the actual work system. Customers, Products & Services, Infrastructure, Environment and Strategies make up the remaining five. These elements facilitate a broader, holistic understanding of the actual work system and its dynamics. Each specific element within the Work System Framework should remain in alignment, as indicated by connecting arrows. There are many relationships:

- Customers, Products & Services, Infrastructure, Environment and Strategies impact and can be impacted by the other six elements.

- Within the work system, Participants, Information and Technologies impact and are impacted by Processes & Activities.
- The Processes & Activities exist to create Products & Services and are adjusted accordingly.
- The Products & Services are created for Customers and are adjusted accordingly.

For example, a change to a process or activity may result in the necessity to change some or all the participants (Alter, 2013). The elements are discussed further in the analysis. Alter (2013) defines the use of Work System Theory by quoting Clarke and Primo (2012): “theories are like maps: the test of a map lies not in arbitrarily checking random points but in whether people find it useful to get somewhere” (p. 75).

The framework has been used in prior studies. Seymour, Aberdien and Ramasamy (2011) conducted research using Alter’s (2003) work system method in which they focused on a student registration work system at a University. The study found that Alter’s (2003) Work System Method proved itself to be a useful tool in the analysis of a specific process and its activities. The Work System Framework in particular, served as an effective descriptive model in promoting a clearer understanding of business process change from an organizational perspective (Seymour et al., 2011). The model in Figure 1, adapted from Alter’s (2003) Work System Framework by Seymour et al. (2011), incorporates themes into each of the nine elements (constructs) of the framework showing factors which either help or hinder the change to the registration process.

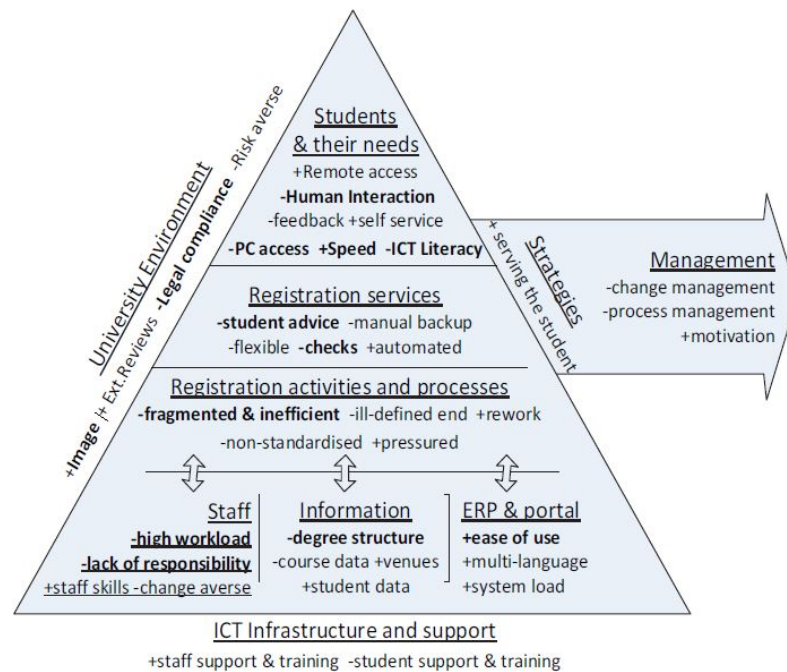


Figure 1. Model for Changing the Registration Work System (Seymour et al., 2011)

### *THE WORK SYSTEM LIFECYCLE*

Alter’s (2013) Work System Lifecycle complements the Work System Framework and completes Work System Theory. It provides a model within which to describe the emergent, iterative and evolving nature of a work system, particularly in terms of unplanned adaptations and opportunities. The Work System Lifecycle is not based on nor does it resemble in any way a Systems Development Life Cycle. Rather, it facilitates the analysis of both formal project work and adaptations or workarounds to existing systems (Alter, 2013).

Alter's (2003) Work System Lifecycle gives examples of unanticipated (unplanned) "adaptations" or phenomena in each of the four phases of the lifecycle. These phenomena are categorized as "diffusion of innovation, experimentation, adaptation, emergent change, path dependence, windows of opportunity, and assimilation gaps" (p. 382). Although regarded as "unanticipated" (unplanned), the Work System Lifecycle does not treat these phenomena as "requirements-creep" or aberrations but rather as normal occurrences within a real systems lifecycle. Unplanned change often leads to innovation and larger, more formal project implementations (Alter, 2003).

To develop a business process redesign methodology suitable for use by small to medium enterprises, Laar & Seymour (2017) conducted research exploiting Alter's (2013) Work System Framework and Lifecycle. Their resultant SME Business Process Lifecycle, reflected in Figure 2 is a synthesis of Alter's (2013) Work System Lifecycle, the business process redesign approach of Kettinger et al. (1997) and a composite business process re-engineering framework, developed by Palma-Mendoza, Neailey, & Roy (2014). The research study reveals the versatility of Work System Theory in the analysis and design of IT-related work system process improvement initiatives (Alter, 2013).

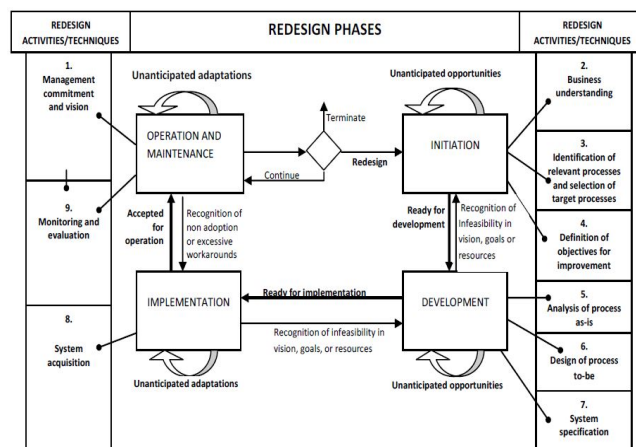


Figure 2. An adapted SME-Business Process Life Cycle (Laar & Seymour, 2017)

**LITERATURE REVIEW SYNOPSIS**

While literature exists describing business process change, redesign or improvement initiatives, most place their emphasis on planned change. Most business process change studies treat change as a simple sequence of planned events, but change can also be spontaneous, revolutionary, unanticipated or unplanned. The phenomenon of unplanned change which has been the focus of this study, although acknowledged in much of the literature dealing with organizational goals change, is seldom interrogated and according to Alter and Recker (2017), is ripe for research. Our literature review confirmed this. The unplanned change phenomenon, in the context of the unprecedented #feesmustfall movement, therefore provided a unique opportunity to analyze work system impacts. The thematic matrix, shown in Table 1, reflects theoretical constructs, taken from Alter's (2003) Work System Framework, including related themes and sources emanating from the literature review itself. These constructs and related themes were used in the research study's findings.

Table 1. Thematic matrix

Construct	Themes	Literature Sources
Processes & Activities	Formal; Informal; Human Intervention; Judgement; Resilience; Stability; Disruption; Resources	(Alter, 2013; Christensen & Overdorf, 2000; Dahlberg, 2015; Liker et al., 1987; Stoddard & Jarvenpaa, 1995)

Participants	Change; Incentives; Evolutionary; Revolutionary; Relationships; Customer	(Alter & Recker, 2017; Christensen & Overdorf, 2000; Liker et al., 1987; Stoddard & Jarvenpaa, 1995)
Information	Data; Text; Web Content; Verbal; Head Knowledge; Files; Records	(Alter, 2013; Sharp & McDermott, 2001)
Technologies	Tools; Hardware; Software; Fit	(Alter, 2013; Seymour et al., 2011; Trkman, 2010)
Products & Services	Process; Activity; Product; Service; Competitive; Better	(Alter, 2013; Harmon, 2014)
Customers	Products; Services; Value; Requirements; Strategy	(Alter, 2013; Trkman, 2010)
Strategy	Departments; Alignment; Service; Excellence	(Alter, 2013; Smith & Fingar, 2003; Trkman, 2010)
Infrastructure	Human (training); Informational; Technical	(Alter, 2013; Smith & Fingar, 2003)
Environment	Culture; Politics; Policy; Procedure	(Alter, 2013; Smith & Fingar, 2003)

## RESEARCH METHOD

This single, cross-sectional case study adopted an interpretive paradigm “aimed at understanding the context of process change and how process change influences and is influenced by the context” (Grover & Kettinger, 2000). The theoretical contribution is the resultant explanation which is labeled as a theory for explaining or understanding by Gregor (2006). The study focused on the phenomenon of unplanned business process change in the context of disruptive social upheaval, with the unit of analysis being the #feesmustfall movement and its impact on business processes at the University. There is a need for studying more socially embedded processes particularly within developing countries (Avgerou, 2010) such as in this paper.

Ethics approval to conduct research and interview participants at the University was obtained from the Information Systems department in the Commerce Faculty, the University’s Research Ethics Committee as well as Human Resources department. Both authors played the role of participant observers as they are both employed at the university. The one author as an academic and the other as a business analyst.

### DATA COLLECTION

Data was collected from July to August 2017. Interviews were conducted with a purposive sample (Marshall, 1996) of 9 participants chosen from 3 distinct groupings; Administrators, Faculty Managers and ICT practitioners.

**Table 2. Participant Sample**

Participant Codes	Role / Area of Expertise	Participant Years of Service
A1	Senior Administrator / Business	36
A2	Senior Administrator / Business	22
A3	Senior Administrator / Business	15
T1	Technical / ICT/ ERP	23
T2	Technical / ICT/ ERP	14
T3	Technical / ICT/ ERP	15
F1	Faculty Manager	2
F2	Faculty Manager	4
F3	Faculty Manager	24



**Table 3. Table of Data Sources**

Code	Data Source
CR	2016 Remote Registration Change Requests
CD	2017 Deferred Examinations Change Requests
CM	2017 Mini Semester Change Requests
DB	2017 DB2 to MSSQL Infrastructure Project
FG	Department of Higher Education and Training (DHET) Grant Project
FL	Laptop Project
FN	NSFAS Central Application System (CAS) Integration
HA	Humanities Academic Administration
HC	Humanities Academic Calendar
HS	Humanities Staff Moratorium

Table 2 lists the 9 participants who are referred to throughout this study using respondent codes to guarantee their anonymity. Roles included Faculty Managers, Systems Analysts, Development Managers and senior administrative managers. In interpretive case studies data triangulation is recommended and serves to discover diverse meanings within the case (Keutel, Michalik & Richter, 2014). Hence supporting documentation was collected as indicated in Table 3.

The semi-structured interviews were audio-recorded using a mobile device only after the Individual Participants Consent Form, had been signed indicating participant approval. Myers and Newman (2007) note that semi-structured interviews allow for “flexibility, improvisation and openness” (p. 18). An interview schedule was used but questions were not always posed sequentially but were sometimes rephrased or skipped or new questions were added altogether.

In most cases, the transcription of interview recordings took place as soon after each interview as possible. The average length of each recorded interview was 40 minutes and the transcription process took anywhere between 2 to 3 hours of painstaking effort. Coding of data, e.g., the search for interesting and noteworthy statements or observations, began once the transcribed Microsoft Word files had been reviewed for typing or grammatical errors, corrected and uploaded to NVivo™.

### ***DATA ANALYSIS***

Understanding the case is the main purpose of theorizing in interpretive case study research and strong case narratives help construct a thorough picture of the situation. (Keutel et al., 2014). Walsham (1995) notes that there are many ways of generalizing from interpretive case studies, from generating theory to contributing rich insights. Hence in this study we used thick descriptions to contribute insights. Walsham (1995) warns that entering the empirical field with specific constructs in mind can constrain openness to the actual data but at the same time usage of macro theories is helpful to break away from the fixation on micro phenomena. Therefore, this research adopted an abductive approach in which theory and data are intertwined and “played off against one another in a developmental and creative process” (Blaikie, 2010, p156).

Braun and Clarke (2006) define a procedure which combines elements of both inductive and deductive reasoning with a thematic approach to the analysis and interpretation of qualitative data. Initially, one researcher diligently applied steps 1 to 5 inductively without developing a thematic map or network:

- Step 1. Familiarize yourself with the data
- Step 2. Generate initial codes



- Step 3. Search for themes
- Step 4. Review themes.
- Step 5. Define and name themes

Although useful in generating a plethora of NVivo™ nodes, the ultimate result was an abundance of codes and basic themes lacking cohesion or organization. Following the abductive approach, the basic themes were then classified into a thematic network or map working deductively from Alter's (2003) Work System Theory. Abduction becomes meaningful when moving from inductive basic themes to a second level of constructs (Blaikie, 2010).

During the analysis of transcript data within the NVivo™ application it was also possible to extract NVivo™ generated Copybooks containing coded nodes and additional information at strategic intervals during the process. This enabled the researcher to keep track of progress and at the same time maintain an audit trail of code material either added or removed from the NVivo™ project.

### *CASE DESCRIPTION*

The #feesmustfall protest movement at the end of 2015 was fueled by the increasingly exorbitant cost of higher education in South Africa (Bitzer & de Jager, 2018). The exponential increase in costs can be attributed to the gradual decrease in university funding by the South African government, particularly funding of the National Student Financial Aid Scheme (NSFAS). The NSFAS is responsible for providing funds to financially disadvantaged students in higher education (Calitz & Fourie, 2016).

The University of Cape Town, referred to in this paper as the University, shared the role of both protagonist and antagonist throughout the #feesmustfall saga. The institution has been at the forefront of ongoing discussion and negotiation with students and the Government regarding a more equitable and holistic solution to the funding of tertiary education. (Calitz & Fourie, 2016; Langa, 2016). The University dates to the early 1800's making it one of the oldest institutions of higher learning in South Africa. The University boasts 6 Faculties; Commerce, Engineering and the Built Environment, Health Sciences, Humanities, Law and Science. It is home to just over 29000 students of whom approximately 18400 are undergraduate and 10600 are postgraduate. A combined contingent of academic, administrative, support and service staff number approximately 4500 (UCT, 2017).

The protest at UCT resulted in the university phasing out outsourcing of workers, the establishment of working groups to review artwork in its buildings, to decolonise curricula, the establishment of task teams to respond to sexual offences on campus, and a truth and reconciliation commission to assist in mending relations on campus (Langa et al., 2017). In human terms the protests left the campus deeply divided along racial and professional lines, with arrested, expelled and suspended students; with some staff and students with serious physical injuries; and many with collective trauma (Langa et al., 2017).

This study, however, focuses on unplanned business process change resulting from the #feesmustfall movement, specifically related to business processes in the PeopleSoft ERP environment. The University's administrative systems are dominated by two monolithic ERP's, specifically SAP ERP and the "Oracle PeopleSoft Campus Solutions" ERP simply referred to as PeopleSoft and a Sakai based learning management system (LMS), called VULA. The SAP ERP is used predominantly for budget management, financial reporting, procurement, asset management, human resources and Payroll. The PeopleSoft ERP is used to manage all aspects of student administration at the University including, but not limited to, the application, registration, records and enrolment, curriculum management, financial aid, student financials and academic advisement modules (ICTS, 2017).

At the university, pressure to adjust the academic calendar because of disruption to lectures and examinations resulted in changes to the registration process (Price, 2016). In addition, the Financial Aid business process; a process used at every University in South Africa, had to change to process an

evolving set of business rules rapidly introduced because of Government's reaction to the #fees-mustfall movement (Brundenius, 2017; Edwin, 2016). Further impacts are described in the analysis.

## ANALYSIS AND DISCUSSION

The sections which follow discuss findings and related literature in terms of unplanned business process change and Alter's (2003) Work System Framework. Constructs taken from the framework together with corresponding themes emerging from the analysis have been divided into 3 groups. The first group (Table 4) contains external framework constructs (infrastructure, environment and strategies).

**Table 4. External Framework Constructs**

Constructs	Themes	NVivo™ Counts
Strategies	<u>Communicating with the student</u>	8
Strategies	Non-negotiable academic project	4
Strategies	Serving the student	4
Environment	Budget cuts and financial austerity	7
Environment	Government financial directives	4
Environment	Changing Policies	5
Environment	<u>Political activity and insecurity</u>	9
Infrastructure	Establish secure venues	5
Infrastructure	Inadequate technical resources	6
Infrastructure	<u>Staff support and training</u>	8

The second group (Table 5) contains internal framework constructs (customers or students, products and services) and the third (Table 6) contains work system constructs (processes and activities including unplanned change management, participants, i.e., administrative and technical staff, information and technologies). The counts reflect the number of coded text elements per theme.

**Table 5. Internal Framework Constructs**

Constructs	Themes	NVivo™ Counts
Customers (Students)	<u>Changed behavior patterns</u>	7
Customers (Students)	SSA enrolments and targets	6
Customers (Students)	PC and network access	5
Remote Registration Service	Accelerating online registration	8
Remote Registration Service	Resistance to remote registration	7
Financial Aid Service	Co-dependent and reactive	7
Financial Aid Service	Enforced unplanned change	2
Financial Aid Service	Forewarned and forearmed	3
Deferred Examinations Service	<u>Knock-on effect</u>	13
Deferred Examinations Service	Mini-semester to complete syllabus	6
Graduation Service	Unanticipated advantages	10
Graduation Service	Driving self service	3

**Table 6. Work System Constructs**

Work System Constructs	Themes	NVivo™ Counts
Processes & Activities	All at once change model	5
Processes & Activities	Collaboration and dependencies	7
Processes & Activities	Resilience and equilibrium	7
Processes & Activities	<u>Unplanned change management</u>	16

Work System Constructs	Themes	NVivo™ Counts
Processes & Activities	Workarounds	10
Participants (Staff)	Deteriorating staff wellness	7
Participants (Staff)	<u>High Workload</u>	10
Participants (Staff)	Staff productivity	6
Participants (Staff)	Sustaining Productivity	6
Information	<u>Academic calendar</u>	10
Information	Examination timetable	5
Information	Timetabling venues	2
Technologies	DB2 to SQL data migration	3
Technologies	ERP inefficient but programmable	8
Technologies	VULA LMS used for changes	4

### ***UNIVERSITY STRATEGIES***

The strategy element speaks to work systems needing to align to organizational strategies. During unplanned change it was the university's strategies that forced the work system into flux.

#### **Non-negotiable academic project**

Not all work systems are of equal strategic importance however, all work systems should be strategically consistent with enterprise and departmental strategy (Alter & Recker, 2017). In terms of the University's strategies; the one over-riding, non-negotiable strategy to emerge was management's decision to ensure that the "academic project" remained uncompromised.

*"The big deal around that time was not derailing, in an irrecoverable way, the academic project; in other words, how to avoid losing a year" (F1)*

Fundamentally, work systems, of which business processes are an integral part, exist to produce products and services for an organization's customers (Alter, 2013). Business processes add value by satisfying customer requirements (Trkman, 2010) and customer requirements are often only met if strategic and business process objectives are aligned (Smith & Fingar, 2003). Therefore, the strategic decision taken by management to complete the "academic project" at all costs meant that strategies and business processes throughout the University had to be realigned.

#### **Serving the Student**

Work system realignment resulted in adaptations to processes related specifically to serving the student's needs, e.g., online strategies were employed to ensure that students continued to receive instruction despite intermittent disruption to lectures or denial of access to campus.

*"We had to introduce a whole new process called 'Blended Learning' so students were told they would be examined on material uploaded to on-line sites" (F1)*

#### **Communicating with the Student**

Communicating with students is core to processes and strategic for the University. Both A2 and F1 commented on how communication between the administration and the student had to evolve to technological formats to facilitate changing circumstances and inaccessibility caused by upheaval.

*"The way we received information and provided information had to change. It had to be an email or the phone" (F1)*

## ***UNIVERSITY ENVIRONMENT***

The environment, in terms of the Work System Framework, refers to policies and procedures, politics, stakeholders and organizational history. Each of these factors, whether directly or indirectly, can either enhance or degrade work system performance (Alter, 2013).

### **Political activity and insecurity**

Although the context within which this study took place was by its very nature political, very little reference was made to politics other than observations like those articulated by F3 in terms of personal perceptions of insecurity.

*“... the actual disruption of campus life was significant. We were always aware of it but not directly impacted on a minute by minute basis” (F3)*

### **Government financial directives**

References were made to the root cause and effects that Government financial directives had had on the University's financial resources, policies and procedures. According to statistical data published by the University, 42% of the University's general operating budget is derived from Government subsidies, 43% from tuition fees and 15% from other sources (UCT, 2017).

*“... we (the University) get our subsidy from government based on what we submit.” (A1)*

Interventions by Government and resulting disruption had a catalytic impact on unplanned, accelerated and unavoidable business process change.

*“... People were waiting for Blade M. (the then National Minister of Higher Education) to make his announcement of fee increases which came around October which then acted as the catalyst for the second round of disruptions” (T1)*

### **Budget cuts and financial austerity**

Therefore, by implication, disruption to the University's environment and its ability to attract and conduct business had a negative effect on its financial resources. As a result, decisions were made which affected staff workloads, productivity, processes and activities in the work system.

*“ICTS's budget was cut by about 30% and so, because of austerity, the university had to let some staff go by offering voluntary severance packages” (T2).*

### **Changing policies**

Unplanned change also meant that where business processes were introduced quickly, policies and procedures needed to be introduced or amended quickly.

*“... we had to at very short notice change the procedure and the policy for dealing with deferred exams.” (A3)*

## ***UNIVERSITY INFRASTRUCTURE***

Infrastructure forms the base of Alter's (2003) Work System Framework. It encompasses human infrastructure, e.g., training and support, informational infrastructure, e.g., documentation and technical infrastructure, e.g., networks. Although managed outside of the work system itself, it is essential to a work system's optimal performance (Alter, 2013). Three areas surfaced during data analysis; concerns regarding inadequate technical resources, issues pertaining to staff training and support and the establishment of secure venues to ameliorate security concerns and facilitate administrative process.

### **Inadequate technical resources**

Following protests in October 2015, faculties and departments were forced to make alternative working arrangements for their administrative and support staff to work remotely. Emergency purchasing

of laptops and tablets for staff and students was initiated. Technical infrastructure had to be protected physically and where possible network access and VPN technology had to be rapidly rolled-out to students and staff alike. Cellular network providers were contacted to provide free data access to the university LMS.

*“... we needed to respond immediately to issues like networks, were they up or down, were the buildings safe or not” (T1)*

F1 pointed out the difficulties that her staff had experienced in working off-site and emphasized the need for the establishment of future protocols and procedures to avoid similar problems occurring again.

*“I think the university needs to introduce a protocol for staff to be able to work remotely when the need arises” (F1)*

### **Staff support and training**

Whether because of increased workloads or the prevailing atmosphere of alarm and despondency, the inability of staff to adapt to changing business processes was attributed to a lack of adequate administrative systems training and available systems documentation.

*“I think we have a problem with training. And there is a huge problem with documentation. For me I think there is a big gap in the way we train our staff.....you can't retrain staff when you are in the middle of something like that” (F2)*

### **Establish secure venues**

Within the context of disruption and compromised campus security, the University's ability to secure venue space became extremely important.

*“... we no longer could spread our venues around campus for different exams because of the security issue.....so we had to put everybody into the sports center” (A3)*

The way in which the issue was resolved has resulted in potentially long-term benefits.

*“The other side of registration was creating a secure registration venue centrally to reduce the physical risk and disruption. So, the infrastructure is in place and can be activated should the need arise” (T1)*

## ***STUDENTS (CUSTOMERS)***

Placed at the apex of the Work System Framework, the Customer element is its most important. The work system exists to produce products and services which the customer consumes to the benefit of both customer and institution (Alter & Recker, 2017). Ironically the context within which unplanned change to administrative services at the University occurred, was fueled by the customers or students for whom the services exist. Yet the changed processes often had a negative impact or cost for the students.

### **PC and network access**

It became increasingly apparent at the outset of disruption to administrative services that the lack of student access to existing or revised services was an issue. The perception prevalent amongst staff had been that all students would have network or computer access. Broekman, Enslin, and Pendlebury (2002) refer to the “dilemmas of distributive injustice in the use of ICT” (p. 29) when describing the very real lack of access to ICT experienced by many students.

In articulating this realization F1 commented; *“We assumed that a student at UCT had access to on-line resources (but) it could be a student that has no parents and/ or comes from a rural area. If the university is closed, they don't have the resources to go home” (F1)*

Ultimately, this short-term, faculty-centric solution was rolled out campus-wide as University policy to the advantage of future students.

*“So, all financial aid students in first year were given laptops so we had to develop very quickly a self-service system where students could complete terms and agreements, laptop serial numbers could be recorded. And this development or policy will remain in place” (T2)*

Alter (2013) speaks of “longer-term changes in practices or goals that occur as adaptations and workarounds are incorporated into organizational routines” (p. 82).

### **Changed behavior patterns**

In terms of emergent change and possible outcomes, Alter (2013) speaks of “issues that were not anticipated in the initiation phase” (p. 82). In November 2015 the existing deferred examination service was hastily amended to accommodate all students disadvantaged, in one way or the other, by the #feesmustfall protests. This, according to A1 and A3, led to unanticipated student behavior.

*“... what springs to mind is deferred examinations. Previously we would maybe get 600 applications a year. And suddenly it was like thousands” (A1). “This year already, we are sitting on just under 900 students. That is like a 300% increase! I think it will be many more years before we change back or put the genie back into the bottle” (A3).*

### **SSA enrolments and targets**

The University’s Semester Study Abroad (SSA) program, which accommodates international students, experienced a dramatic fall-off in enrolments. This was attributed to concerns regarding security however, of greater impact was the change to the academic calendar.

*“Yes, the SSA student intake has dropped dramatically.... because changes to our calendar were now clashing with their academic calendars” (A3)*

## ***PRODUCTS AND SERVICES***

Work systems use business processes and activities to produce products and services for customers (Alter, 2013). Because customers continuously demand better, more competitive products and services, business processes change (Harmon, 2014). However, business processes and their services normally change within a planned environment. The following services offered to the University’s students, emerged as preeminent during analysis of data.

### **Deferred Examination Service**

The extension of the existing deferred examination service into January 2016 to facilitate “all” students wishing to defer examinations had a domino effect on related business processes and opened a Pandora’s Box of administrative issues.

*“The first thing that happened was deferred exams which had a huge impact on the end-of-year business process” (T2)*

It meant that an additional examination timetable for January 2016 had to be created; venues not normally available at that time of the year had to be commandeered; funds had to be appropriated to “bailout” financially disadvantaged students returning to write deferred examinations; self-service functionality had to be hastily developed to allow deferring students the opportunity to indicate whether or not they required accommodation; the vacation accommodation business unit had to relinquish its bookings to facilitate deferred examination students; the supplementary examination timetable had to be amended; the December graduation service was upended; and because huge numbers of students chose to defer, faculties had to convene additional readmission appeals committee processes following the examinations and before the 2017 registration.

A resurgence of protest action in 2016 necessitated a repeat of the one-size-fits-all deferred examination service but this time, because teaching time had been severely compromised, the concept of a

mini-semester was introduced. This had far-reaching administrative repercussions and serves to illustrate Sterman's (2002) notion that "everything is connected to everything else" (p. 2). Sterman (2002) goes on to quote Sir Thomas More who wrote in Utopia that "by applying a remedy to one sore, you will provoke another" (p.2).

*"Once we realized that we were not going to be able to teach the last 4 weeks of semester, we needed to make that up. Hence the invention of the mini-semester. So, we brought people back for the mini-semester, the first 3 weeks in January then followed by the 3 weeks of exams. Then we had to allow time for exams to be marked and the marks to be uploaded and then the faculty exam committees would sit to determine who could continue and who couldn't and then there had to be a readmissions appeal committee process" (A3)*

Consequently, the 2017 academic calendar was adjusted by one month leading to additional impacts along the administrative value chain.

### **Remote Registration service**

The PeopleSoft ERP based registration service at the University, although prefaced by an on-line application and admissions process, is in and of itself not an on-line process. It relies heavily on manual intervention by central admissions and faculty staff (Seymour et al., 2011). The registration work system is designed to develop a student's application through a series of steps from application to enrolment into a valid program of choice and applicable courses. The process relies heavily on face-to-face "advisement". The rapidly deteriorating security situation was cited as the main reason for implementing the remote registration service.

*According to T1, "moving registration to an interactive process rather than a face-to-face process has been in the pipeline but #feesmustfall has accelerated it" (T1).*

The interim remote registration service, although offering a quasi-on-line registration experience, still relied heavily on intervention by faculty-based staff. This led to resistance from both staff and students alike.

*"... it is not 'rules' based. It is not smart. There still needs to be an administrator behind the functionality looking at documents being uploaded by the students. So, things piled up and students got furious" (A3). "Our academics have said they are not prepared to participate in this remote registration. They are only prepared to put effort into an on-line registration solution" (F3).*

Alter (2013) refers to the "recognition of non-adoption" (p. 78) during the operation and maintenance phase of a work system. He suggests that adaptations to these changes may be necessary before returning them once more to the operation and maintenance phase.

### **Financial Aid Service**

Although changes to the national financial aid paradigm, affecting all Universities in South Africa, had been proposed by NSFAS prior to the outbreak of #feesmustfall protests, no serious attempts had been made by the University to implement these proposals. This changed in October 2015.

*"We were not planning to do this until it was kind of foisted upon us... we had no option but to participate" (T1). "... the NSFAS central admissions system. That suddenly kicked in out of the blue. So that project became a top priority and there were huge issues around integrating with NSFAS" (T2)*

### **Graduation Service**

The graduation service is the culmination of an individual's journey from applicant through to graduate. Accordingly, there were significant concerns when the graduation service had to be rescheduled to April the next year due to factors such as deferred examinations, the mini-semester and the amended academic calendar.



*"We have always had graduation in December and in June...." (A1). "You see the great fear was that we have always done it like this and people expect to do it like this and there will be riots if we don't" (A3).*

Despite these concerns, disruption to the graduation proved to be something of an epiphany. Not only have the University's customers, students, parents and benefactors alike embraced the concept but the revised timeframes assist with administration.

*"I mean when it comes to quality assurance and assessment it makes so much sense" (F2). "... it makes the academics happier because it means we can do our work better. And we can check quality" (F3)*

## ***PROCESSES AND ACTIVITIES***

Processes and activities form the core of the work system. The term 'Processes and Activities' covers any work of any description that actually needs to get done to produce products and services for the customer (Alter, 2013). In terms of unplanned change management, an analogy may be drawn between this work system environment and the revolutionary and "all at once" change models referred to by Stoddard and Jarvenpaa (1995) and Liker et al. (1987) respectively. Alter and Recker (2017) argue that "managers of operational systems need to understand and manage or respond to every element in the work system framework" (p. 66).

### **All at once change model**

A1, F2, T1 and T3 describe the type of environment within which work had to be performed and indicate by their responses the type of change that took place.

*"... every single process just went out the window. It was a case of fighting fires" (A1). "The timelines were thrown out because the academic calendar was rescheduled. So, the timeframes changed, the number of times we had to do a process changed, and there were overlaps and then there were new things introduced for which there was no process" (F2).*

### **Workarounds**

Desperate times demand desperate measures and the unpredictable work system environment led to an increase in workarounds, some of which, according to T1 and T3, will need to be rolled-back.

*"some of this work is work that is going to have to be undone and redone because we can't now take this re-worked schedule and make it the basis for next year because it is not a proper year's schedule" (T1). "We will have to go through yet another process of reversing the changes we have made and that is going to take a month of Sundays" (T3).*

### **Resilience and equilibrium**

On a more positive note and despite the slough of negative impacts on processes and activities, most of the respondents acknowledged that the University's systems and support mechanisms proved relatively resilient. A system's degree of resilience can be measured by its ability to regain equilibrium following disruption (Dahlberg, 2015). The following statements support this observation.

*"Our infrastructure has been adequate, and I would say our systems have been resilient considering the changes we have had to make" (T3). "PeopleSoft has shown itself to be quite capable" (A3).*

### **Collaboration and dependencies**

The emergence of a collaborative long-term view of process change, leveraging off dependencies and the synergy that exists between Universities using the PeopleSoft ERP, became apparent.

*"We have spoken to the University of Pretoria. They use PeopleSoft for their graduation process.....we are going to clone what they do" (A1). "This whole NSEAS integration had all the PeopleSoft universities working independently*

*trying to integrate NSFAS to PeopleSoft.....but the integration bit is common! So, we outsourced just the integration bit. Now we just call it and how we build it into our systems is up to us” (T2).*

### **Unplanned change management**

Dahlberg (2015) referring to “emergency management” says that “traditional command and control-style management approaches are impossible to implement” where unplanned changes impact complex environments (p. 551). The following statements indicate the dramatic effects of unplanned change, referred to by Drummond (1996) as “Mad Hatter’s Parties”.

*“You constantly have to reprioritize and rethink” (A2). “And we would say “You know what, it sounds right, let’s try it”. We just had to go for it. We had no choice. The pressure was on” (F3). “So suddenly there is a problem and we have got to deal with it and out of that chaos we have to try and create a semblance of order” (T1).*

### ***ADMINISTRATIVE AND TECHNICAL STAFF (PARTICIPANTS)***

Alter and Recker (2017) refer to participant’s “skills, knowledge, ambition, and care as key determinants of a work system’s efficiency, consistency, and resilience and of the quality and reliability of product/services that it produces” (p. 3). Yet in this case the changed process negatively impacted the participants performing the activities. Themes emerging from the study’s data, specifically workload and sustainability, suggest that most if not all these key determinants were sorely tested.

### **High workloads**

Miscommunication, uncertainty, prioritization or the lack thereof and tensions between managing crises and attending to operational tasks simultaneously, all contributed to increased workloads.

*“We would make decisions and then someone would change that decision because of someone higher up, so we just couldn’t keep up” (F3). “Sometimes you really do feel overwhelmed but then you just have to decide what the priorities have to be and to hell with everything else” (A2).*

### **Sustaining staff productivity**

Alter (2013) innocuously speaks of iterations of planned and unplanned change in the evolution of work systems (p. 82). However, within the context of unremitting and iterative unplanned change, most respondents agreed that the ability of staff to remain productive and continue to cope with the pace of unplanned change was unsustainable.

*“We were just barely managing given a normal, peaceful year. But this kind of thing is totally unsustainable” (A3).*

### **Deteriorating staff wellness**

An institution’s ability to survive disruption is dependent on the quality of its resources, processes and values (Christensen & Overdorf, 2000). The “quality” of the University’s most valuable resource, staff, was severely impacted.

*“Staff were frazzled. They were upset. They were afraid. They were insecure” (F1). “For a while you could almost say there was a sense of ‘rudderlessness’ on the campuses” (T1)*

### ***INFORMATION***

Alter (2013) defines information/data created or used by work systems as entities that are “used, created, captured, transmitted, stored, retrieved, manipulated, updated displayed and/or deleted by processes and activities (p. 80). An example of information could very well be business rules (Alter & Recker, 2017).

### **The academic calendar**

Hence, the decision to manipulate/update the academic calendar (pattern) and the subsequent repercussions emerged as a dominant theme.

*“The change to the academic calendar I would say probably had the most significant impact on us” (T1)*

Boudreau (2003) refers to ERP packages as sophisticated and complex and goes on to define an organization’s ability to exploit the capabilities of ERP software as its “quality of use”. The University implemented its PeopleSoft ERP in 2004 and considers its quality of use as high. Nevertheless, changing the academic calendar, particularly in 2016, meant that business rules vis-à-vis the academic pattern or schedule of classes, already configured for 2017, had to be re-configured and business processes related to academic progression, registration and student housing had to be tweaked. It also meant that the University’s sporting and academic conferencing schedules were out of sync with the rest of the country.

### **The examination timetable**

Another data related challenge, precipitated by the decision to offer deferred examinations in 2015 and 2016 and a mini-semester in 2017, revolved around the examination timetable. T1 refers to *“challenges around data in the system, setting up of data, business rules, the business processes that would allow us to superimpose one years’ timetable on another. So that was a big one – rescheduling the whole of 2017” (T1)*.

### **Timetabling venues**

Venue master-data is crucial to the timetabling process in terms of class capacity, location, resources, architecture and availability. According to F3 and T2, the allocation of venues was fraught with unanticipated problems.

*“We assumed that the venues would just carry on, so we said we were suspending teaching and we assumed that when we started we would have the same venues, but it didn’t happen like that” (F3).*

## **TECHNOLOGIES**

The Work System Framework views the technologies element as representative of any tools, techniques, hardware and software whether automated or not, used by participants in a work system to do their work (Alter, 2013).

### **ERP (PeopleSoft) inefficient but programmable**

The PeopleSoft ERP is core to student administration at the University and as such featured prominently in the analysis of data however, two distinct patterns or views emerged. On the one hand the technical view and on the other, the administrative view. Technically, a great deal of bespoke development work had to take place.

*“At the end of 2016 there was an 8% fee increase. So, to prevent riots all students with an income of less than 600,000, that’s a family income per annum, would not be liable for the 8% increase. So, this was all development that had to be done in PeopleSoft” (T2).*

The Administrative view, based on the actual use of new functionality resulting from bespoke development, revealed a lackluster and often negative acceptance by staff.

*“I mean I get my staff complaining endlessly. They say it is a duplication of effort. They have to sit with 7 screens open to do one process. It is not an efficient system, but they are forced to use it. PeopleSoft is soft on people!” (F2)*

### **VULA LMS used for changes**

Where the PeopleSoft ERP proved unable to accommodate certain requirements or technical staff were either too slow or unable to react, the VULA LMS was used. Referring to an alternative solution

to facilitate remote registration, F3 proudly commented that; *“the PeopleSoft solution is not as advanced as our VULA solution”* (F3)

### **DB2 to SQL data migration**

An example of unplanned change, triggered in this case by financial constraints, was the decision taken by management to migrate the PeopleSoft ERP from the Oracle DB2 database to a Microsoft SQL platform.

*“The motivation behind this was that it will facilitate better integration between PeopleSoft and other systems which are predominantly SQL and the catalyst for it was the introduction of austerity measures because of #feesmustfall. You see the Oracle database is expensive and a lot more complex than the SQL platform”* (T3).

### **RESULTANT MODEL**

An adapted Work System Framework for unplanned business process change is shown in Figure 3. Dominant themes appear underlined in bold face and serve to guide the discourse within and between each of the elements. Alter’s (2003) Work System Framework makes no mention of a “management” element or construct however, after further reading it was discovered that in a recent publication, Alter and Recker (2017) clarify the “governance” or “management” issue by arguing that Work Systems Theory “does not include a separate governance component. It assumes that governance itself is actually a work system and can be analyzed as such” (p. 57). Therefore, for the purposes of this study, unplanned change management, although emerging as a dominant organizing theme, is treated as another activity or process within the broader work system.

Within the context of #feesmustfall, the phenomenon of unplanned business process change, except for the University’s Infrastructure, was initiated and driven by *external factors*. These include Government directives and politics on the one hand and non-negotiable strategies imposed by senior management on the other. To mitigate the consequences of Government directives and politics, the University implemented strategies, particularly the strategy not to compromise the academic project in any way, shape or form, i.e., to complete teaching the full curriculum at all costs. These external factors then spawned internal factors driving unplanned change.

Within the work system, unplanned change resulted in accelerated amendments to existing services and the rapid introduction of workarounds. Existing services such as the financial aid service had to change because of Government directives. Workarounds such as the deferred examinations and the remote registration services had to be developed and implemented. This unplanned change had to be managed in what appeared at times to be an “all-at-once” change model imposed by sustained disruption and necessity. In the case of the financial aid service, collaboration between universities, was a positive outcome. Likewise, on a positive note and despite the adverse environment, processes and activities proved to be remarkably resilient. To facilitate deferred examinations, the examinations timetable and the academic calendar had to be rescheduled. Rescheduling the academic calendar, served to open the lid on a plethora of interrelated issues, while the benefits of rescheduling examinations outweighed the disadvantages.

Negative impacts on staff were increased and unsustainable workloads, exhaustion and decreased productivity. Technologies revealed a dichotomy of views held by technical staff and administrative staff. The VULA LMS was an effective short-term alternative to certain processes where the PeopleSoft ERP was not sufficiently flexible. The University’s infrastructure was exposed in terms of its ability to provide adequate off-site, alternative technical resources for administrative staff at short notice. Support and training, including a lack of systems and business process documentation, was another factor exposed by the pressurized working environment. A lack of institutional knowledge and understanding of the University’s value chain made it harder for staff to prioritize and process work efficiently. The use of venues emerged as an infrastructural as well as strategic issue fraught with scheduling and security complexities.

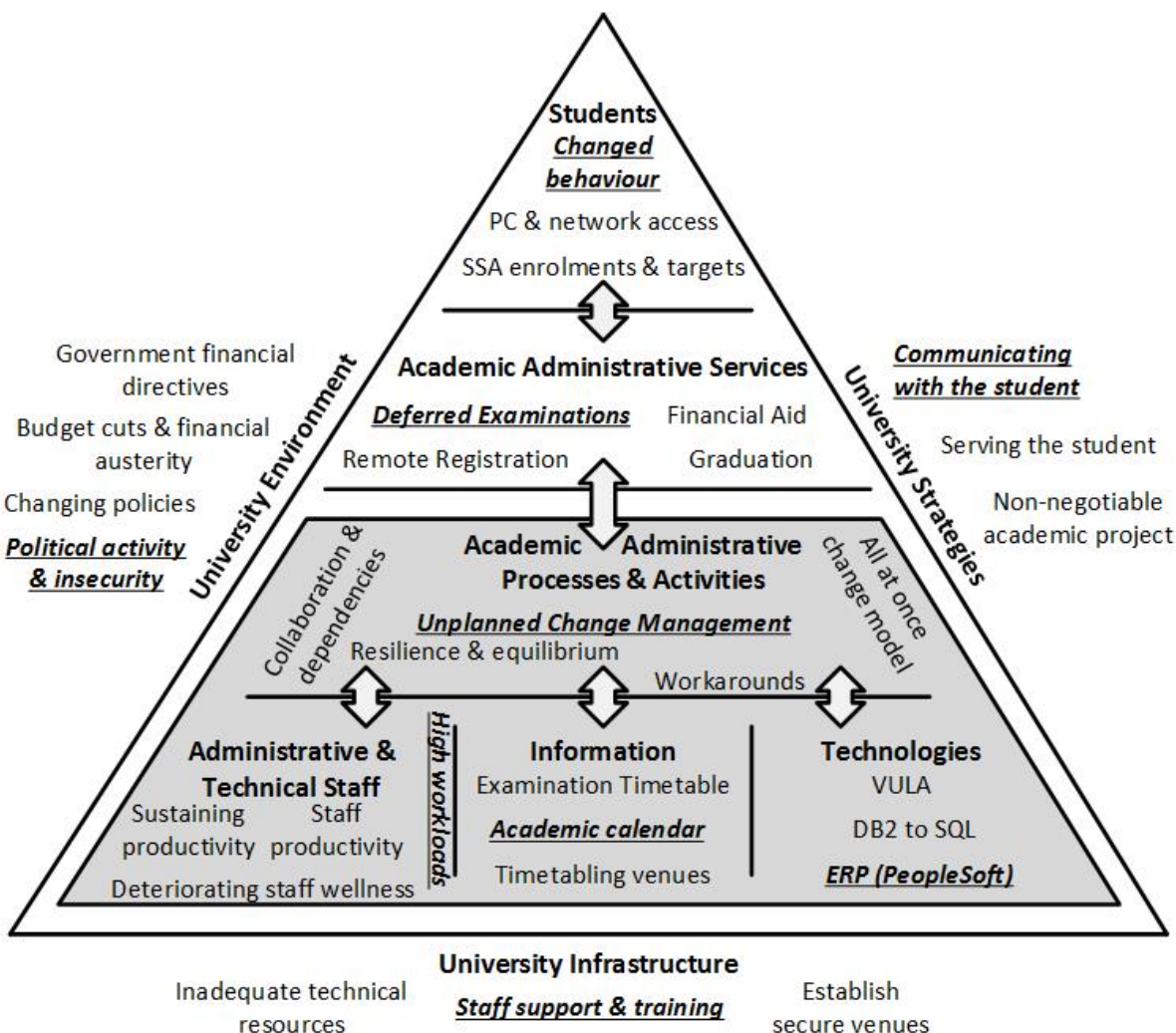


Figure 3. Adapted Work System Framework for Unplanned Business Process Change - With Themes

Finally, unplanned change affected the student, particularly where student behavior is concerned. An example of this has been the dramatic increase in applications to defer examinations. This exerted unsustainable pressure on an already short-staffed examinations office. It also speaks to the unanticipated long-term effects of unplanned change. A further negative outcome was the steep drop in international student (SSA) enrolments due in most part to the shift in the academic calendar. A positive outcome for students was the introduction of a policy to supply laptops to financially disadvantaged students.

Figure 4 presents a diagrammatical synopsis of the cause and effect relationships between themes. The figure illustrates the overwhelming causal nature of the #feesmustfall context in terms of unplanned business process change and the domino effect that issues emanating from the University's environment had on elements within Alter's (2013) Work System Framework.

### LIMITATIONS

No limitations or constraints were experienced during this study; however, in retrospect it should be acknowledged that the study's findings might have emerged richer had the participant sample included members of the student body. Alter's (2013) Work System Framework does place the customer at

the pinnacle of the framework and as such the customer should be considered. This omission is discussed in the conclusion and presents itself as an opportunity for further research.

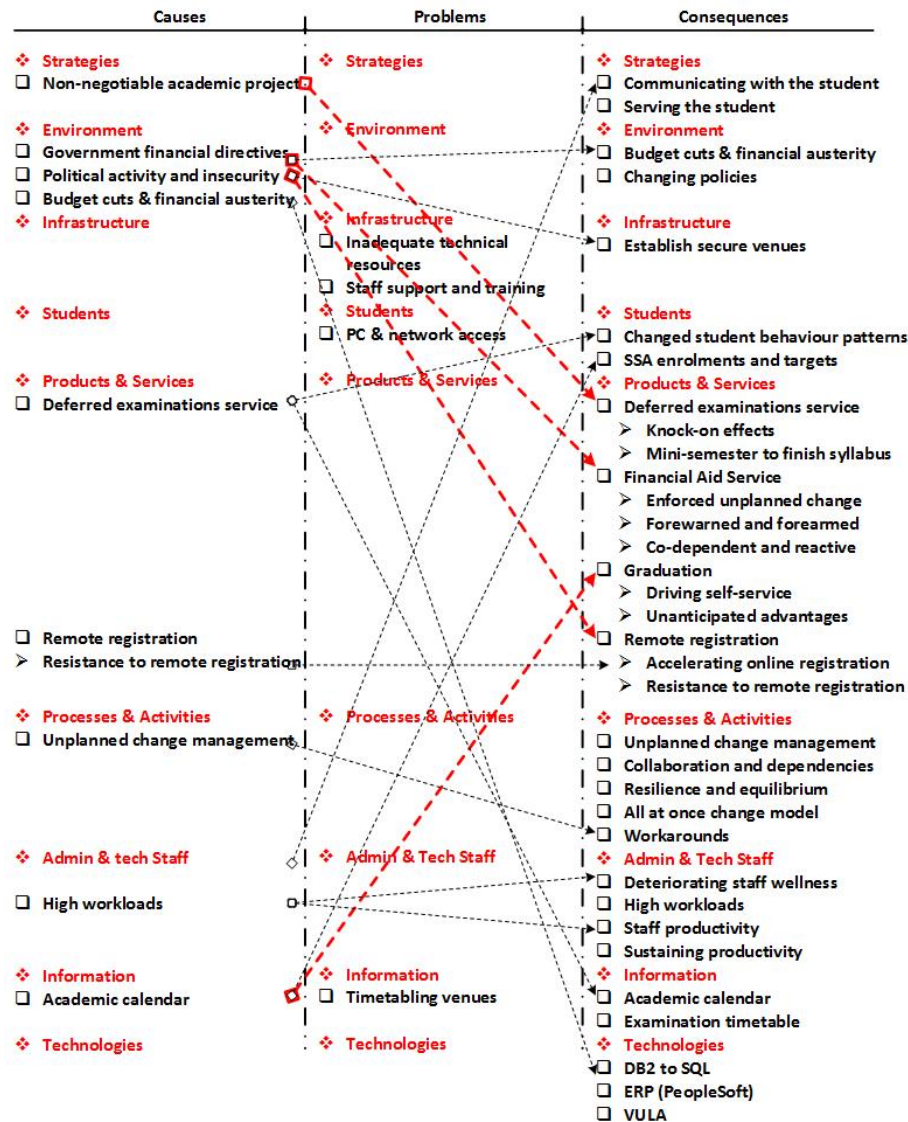


Figure 4. Root Cause Analysis Diagram reflecting cause and effect relationships

## CONCLUSION

This paper focused on the phenomenon of unplanned business process change at a University within the context of the #feesmustfall student movement. It used Alter's (2013) Work System Framework as the theory to answer the research question; what unplanned (unanticipated) business process change occurred at the University because of the #feesmustfall student movement, how did it occur and what were the effects?

Unplanned change came from external forces and was experienced in the form of political activity and insecurity. These external changes impacted strategies which changed and became more focused and impacted infrastructure which was found to be inadequate, especially in the case of staff training and support. The changed environment and strategy together impacted all elements of the work system and its surrounding framework. Services were changed such as deferred examinations, and this



impacted customer (student) behavior. In terms of the actual work system, unplanned changed management was the activity found to be lacking, participants suffered from high workloads and deteriorating wellness, information, such as the academic calendar, had to be changed, and in terms of technology ERP and LMS technologies, which were customizable, were valuable.

Besides an increased understanding of unplanned business process change within the organization, the contribution of this paper to the body of knowledge is twofold. As far as theory is concerned, it has shown Alter's (2013) Work System Framework to be a useful descriptive tool in the analysis of business process change in the IT-reliant work system; not just in terms of technology, but from a broad system thinking perspective. As far as practice is concerned, the paper can be used to inform anyone, from an executive to an administrator, who is remotely responsible for operational systems within the organization, to understand, manage and respond to important dynamics manifest within each element reflected in the Work System Framework.

A glaring limitation, which should be noted, is that students were excluded from the study's participant sample. This suggests further research possibilities from the student's perspective, i.e., how has unplanned business process change in the context of #feesmustfall affected the student's experience at the University? In addition, because the #feesmustfall movement was a nation-wide movement and although no two organizations are identical, or perhaps because no two organizations are identical, it could be useful to conduct further research at other universities in South Africa. In so doing it may be possible to generalize this paper's findings. Studies of unplanned business process change in different context would also be useful. In addition, action research studies might assist in describing the best actions that organizations can take to best manage the impact of unplanned business process change.

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