

**Dynamics of strategic process, performance, and management controls at
the functional level of a firm**

By

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ABSTRACT

DYNAMICS OF STRATEGIC PROCESS, PERFORMANCE AND MANAGEMENT CONTROLS AT THE FUNCTIONAL LEVEL OF A FIRM

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Due to increasing significance of business model innovation and ongoing difficulties encountered in implementing formally developed strategies, there is a compelling case for studying functional level strategic process from a fresher perspective. This doctoral thesis identifies theoretical constructs that characterize functional level strategic processes and its relationship to performance under varied managerial controls. Using a structured questionnaire, we surveyed 455 managers in USA manufacturing sector to collect empirical data concerning functional level strategic process, operations performance, and management controls. Data was analyzed using exploratory factor analysis, mediations, serial mediations, and moderated serial mediations to test the presence of alternative forms of functional level strategic processes and their links to operations performance. Findings of the study confirm the presence of multiple forms of strategy processes, their paths of progression and relationships to operations performance under the influence of management controls such as employees' budgetary participation and extensive use of information technology at the functional level of a firm.

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I am dedicating this doctoral thesis to my nieces - Areeba and Ameera. You both are becoming kind and beautiful individuals, all of us are very proud of you and love you even more.

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1 Introduction

Although strategy and functional excellence have been traditionally dealt with in rather explicit and dichotomous terms in the literature, they are closely related concepts. Functional excellence and desired performance could be achieved through successful execution of well-crafted strategies. In most cases, effective strategies are often carried out based on the deployment of resources, capabilities and work routines that characterize the existing functional system. Decisions made and actions taken at the functional level of a firm have a crucial role to play, in terms of both strategy formation and realization, as well as achieving and sustaining operational excellence. Therefore, understanding the dynamics of strategizing at the functional level and its relationship to operations performance, while considering the influence of management controls, has the potential to make a useful contribution to both theory and practice. Although, existing literature addressed it by either detailing key antecedental issues or how firms are supposed to look like after plans are implemented. But there is a semi-void gap when it comes to the explanation of the middle part, the process. This thesis will describe how process(es) takes place at functional/operation level, explain the relationship between process, performance, and controls, and provide senior managements a functional tool which is dexterous to deal with future disruptions.

Historically, strategy literature has predominantly focused on multivariate analyses of firm or industry level factors on firm performance, bases of competitive advantage and prescriptions for strategy development (Pettigrew, 1992; Connor, 2001; Burgelma et al., 2018). Strategy studies have also afforded prominence to strategy positioning and the use of analytical tools to help strategy planning. However, most of the previous scholarly efforts have fallen short of providing a realistic and comprehensive account of how strategy really works in practice. Additionally, there has been relatively far less attention paid to the aspect of strategy implementation or realization, compared to strategy development or formation (Friesl et al., 2021). Some authors have noted that this disparity contributes to the lack of effectiveness of strategy in achieving operational excellence (Bevington and Samson, 2012; Friesl et al., 2021). The emerging alternative conceptualizations of strategic process offer opportunities for addressing the limitations associated with the longstanding tradition of treating strategy in such disparate terms as process, content, and context, as well as adopting more pluralistic methodological approaches to studying strategy. Strategizing, strategy-as-practice, and micro-strategy are among the alternative conceptualizations of strategy that have

attracted heightened scholarly attention in recent times. Collectively, these conceptualizations emphasize the practice aspect of strategy by focusing on the work of strategy practitioners (doing), including management practices (activities and routines), social interactions or exchanges (context) and associated performance implications. A broader range of methodological approaches (e.g. case studies, action research, ethnographic studies, conversation analysis and large sample surveys) are also being advocated for investigating strategy phenomena at a lower level of abstraction (e.g. roles, actors and interactions) based on these conceptualizations. Overall, while benefiting from the established theories of strategy, these alternative conceptualizations provide complementary perspectives for developing a more complete and realistic accounts of functional level strategic process and its connection with firm's gross movement(s). In this study, we explored the strategy process-performance relationship and influence of management controls on this relationship at the functional level of a business. Using a structured questionnaire, we surveyed 455 managers from USA manufacturing industry to collect empirical evidence. The paper contributes to the literature by providing a strategy process model applicable to the functional level of a business consisting of three sequential stages; 1) initiation; 2) progression; and 3) realization. Based on empirical evidence, we tested a moderated serial mediation model as the theoretical basis and present managerial implications of the findings and future directions for research. The remainder of this essay is organized as follows: next, in literature review chapter, we assessed existing literature and proposed a conceptual model to address the studied problem, which are followed by research methodology. Then we emphasized on data analysis and discussion; and finally, we will conclude the paper with an end note which will discuss theoretical and applied contributions of this research, its limitations and future progression of this study.

2 Literature Review

Survival of individuals depends on their respond to environmental changes. These responses are capabilities that help individuals to suitably deal with the new conditions. These capabilities are triggered in the need of response (in present), developed over time (in past) to reach to certain goals (in future). In organizational context, this reformist process of adaptation according to the environmental needs is known as strategy (Jofre, 2011). A more working definition has suggested by Mintzberg and authors (1998) who defined strategy as the means (plans, patterns, positions, perspectives and ploys) - by which organizations achieve its goals. Strategy is typically based on

two core assumptions. The first is that managers world (the external and internal environment of organizations) – is an objective reality capable of examination and analysis, whereas the second is that managers themselves behave in rational analytic way to make sense of that objective reality (Raynard et al., 2015). On the other hand, institutional theory suggests that the realm (internal and external) of organizations is subjectively perceived by managers, whose perceptions are influenced by social norms, experiences, and expectations, therefore, the perception is selective, and the strategic decisions are creation of their social construction (Meyer and Rowan, 1977).

In both aforementioned cases, the need/response/form/shape of strategy is mostly determined by the external environment, whereas successfully implementation of strategy is largely based on the internal environment. Usually, a firm's environment could be categorized into internal environment (the organization itself) which could be characterized as: goals and values, resources and capabilities, and structure and systems, whereas the external environment has different dimensions regarding politic, social, economic, and legal issues, but the most relevant actors in this environment of an organizations are competitors, customers, and suppliers (Grant, 2008b). Alignment between these internal and external environments becomes the main reason of forming and implementing strategies (Mintzberg et al., 1998). In other words, the constant changes in external environment will drive firms to make changes in the internal environment, and firms do so by developing and executing strategies.

In broad terms, strategy research focuses on the three key themes of content, process and context in both standalone and combined forms. While strategy process research examines how strategies come about and realized (or formulated and implemented), strategy content research deals with the specific decisions and actions (e.g. strategy positions and competitive priorities) that sets apart the incumbent organization from its rivals (Burgelman et al., 2018). By comparison, strategy context research accounts for the factors in the internal organizational environment and the external business environment that influence the strategy process or outcomes. The scope of this paper is limited to the alterative processes of strategy and the influence of certain contextual factors on the relationship between strategy process and operations performance. The paper particularly focuses on the way strategy decisions are made and actions are taken at the functional level of an organization. As such, the remainder of this literature review section examines these aspects in some detail.

2.1 Strategic process

Strategy process can be captured in terms of the consistent patterns in the way strategically significant decisions are made and actions are taken at the different hierarchical levels of an organization (i.e. corporate, business unit and functional). These decisions and actions, at each level of the organization, are typically guided by those at the higher levels and preferably informed by the current status of the lower-level units, including their capabilities, resources and the overall performance (Adamides, 2015). It also accommodates the earlier conceptualizations of strategy process, e.g. deliberate vs. emergent or incremental, intended vs. realized and top-down vs. bottom-up (Mintzberg, 1978). Generally, all strategies goes through a process cycle, known as strategic process, which follows consecutive phases – 1) initiation 2) progression and 3) implementation. In phase one, the most common types of internal environment scanning involve - identification and evaluation of goals, organization ‘s mission and strategic objectives based on key strengths and weaknesses, and if strategies are already in action, then the evaluation of results against the expected strategic objectives. To appraise external environment, we use techniques such as: SWOT analysis, the PEST analysis and the “competitor analysis” which evaluates the strengths and weaknesses of current and/or future competitors in the business. The main idea here is that the scanning activity entails both viewing at and searching for information from the environment to formulate strategies (Choo, 1991). The second stage of strategic process is progression. In this stage, managers use their heightened environmental awareness to formulate options and recommendations (often as a set of alternatives) for future actions. The development and selection of options and recommendations depend on managers expertise, knowledge and perception; therefore, it is rather a subjective action. In the last phase of strategic process, we put our selected strategies to action.

Strategic realization/implementation is the key determinant of organizational success or failure and profoundly connected to the formulation process. However, despite its crucial relevance, implementation is by far the least studied and documented stage in the strategy process (Hitt et al., 2006, Jofre, 2011). In order to implement a corporate strategy, SBU level managers must decompose the strategic objectives onto lower levels, (i.e. functional level) make sure that all employees are involved in the strategic process as well as perform their respective duties in accordance to a uniform mode of action (across the functions) which is compatible with overall

strategic objectives (Gębczyńska, 2016). In the realization phase, preferred strategies are put into action. From a formal planning perspective, this is known as strategy implementation, which determines the organizational success or failure. In the context of bottom-up emergent or incremental strategy process, this may be considered as acting on the consolidated decisions through to fruition. Despite its significance, strategy implementation or realization remains, by far, the least studied and documented aspect of the strategy process (Friesl et al., 2021; Hitt et al., 2006; Jofre, 2011).

Due to its conceptual similarities, process literature is closely related to strategy as practice which is also known as micro-strategy and strategizing (Friesl et al., 2021; Burgelman et al., 2018). According to Whittington (1996), the strategy scholarship first gained momentum during 1960s when central idea was based on planning. He further suggested that the second wave of strategy literature was policy centric (during 1970s), which is followed by process studies at the start of 1980s, and finally in 1990s practice centric ideas gain popularity in strategic discourse. Both, process and strategy-as-practice based research discuss the ‘How’ of strategy which usually take place during formulation and implementation of strategy (Van de Ven, 1992). Furthermore, both process and practice centric studies try to investigate and provide meaningful information on how lower-level strategic process is connected to organizational level process, and the outcomes include strategy, resources and performance (Martin and Roundy, 2012). Main objective for both sides is to unlock the ‘black box’ of strategy.

		Levels	
		Organizations	Managers
Issue	Where	Policy	Planning
	How	Process	Practice

Figure 1: Four perspectives of Strategy (Whittington, 1996)

However, there is a clear distinctive between these sets of ideologies. Process implies sequences, events, activities and interactions which take place during strategy related actions/schemes. Whereas strategy as practice is understood from the viewpoint of accepted way of doing things (Koume and Langley, 2017). Qualitative studies are the preferred way of conducting research and it is promoted by numerous early scholars from both sides (Pettigrew, 1990; Chakravarthy and Doz, 1992; Whittington, 2007), and still this trend carries on (Burgelman et al., 2018). This creates couple of research gaps in the context of process-based research. First, attaching process to only organizational level creates a vacant space when it comes to understand functional level strategic process. Secondly, although this over accentuation of qualitative studies helps us to get a deeper understanding of constructs, their presence and linkages, however, it lacks the dynamism of quantitative study which help us to understand the sequence and connection between strategy, process and performance. In this research we tried to address these two gaps by carrying out process based quantitative study within the context of functional level.

2.2 Functional level strategic process

In order to achieve performance, senior managements must decompose the strategic objectives onto functional level to ensure that all employees are involved in the process. Studies suggest that there should be an implied underlying fit between firm's strategies at the business and functional levels, which in return would make the functions and operations agile (Day, 1984; Hayes and Wheelwright, 1984). However, there's a big literature unavailability to detail the intricacies of functional level of strategic process and execution of strategies. This research will attempt to understand this underlying phenomenon of functional/operational level of strategic process, and to provide an accurate, simple and generalizable picture of functional level strategic process, detailing its causal mechanisms, constructs and variables, and boundary conditions. Depending on the type and size of firm, strategy might take place in two or three levels. In a multiproduct/service company, which operates in multiple markets, strategy is visible at three levels: corporate, business and functional. This organization of strategy into corporate, business and functional levels has gained wide acceptance in strategic management literatures, which suggests that well defined sets of problems and clearly explained decision making domains should exist at each level, especially those with multiple business units (Walker et al., 1992). This grouping of strategic problems and priorities into three levels help us to track complexities of strategic process in conceptual, methodological, and practical ways (Varadarajan and Clark, 1994). Proper execution of corporate and business strategy holds scant value, unless we properly manage to implement the functional strategy (Connor, 2001). In other words, to be effective each functional strategy needs to support the SBUs (both directly and indirectly) by carrying out activities through a consistent pattern of decision making, and trading off between various strategic priorities (Wheelwright, 1984).

Functional level strategic process is particularly aligned with the most recent conceptualizations of strategy, often termed as strategy-as-practice, strategizing and micro-strategy. According to Jarzabkowski and Spee (2008), this school of thought has grown due to the inquisitive absence of actors and what they really do in functional level strategy process. For instance, 'Strategy as practice', accounts for those social, symbolic and material activities through which strategies get implemented (Jarzabkowski and Whittington, 2008). It focuses on the 'doing of strategy' by addressing – who is doing it (practitioners), what tools they are using (practices), and the overall

pattern of activities involved in practice (praxis) (Jarzabkowski and Spee, 2009). Therefore, when studying functional level strategy, the role of middle managers, management controls and performance management systems become particularly relevant. Linking functional level strategy to operations performance could help sustain operational excellence. Functional level strategy addresses the issues related with effective execution and implementation of business and corporate strategies (Newman, Logan, and Hegarty, 1989), and particularly, ensures that collectively facilitate the business strategy to compete in the market (Boseman, Phatak, and Schellenberger, 1986; Montanari, Morgan, and Bracker, 1990). From this theoretical understanding it can be suggested that functional strategy is the main mean for implementing overall corporate (and business) strategies, and the success of this implementation is dependent on the internal consistency of the firm (Nath and Sudarshan, 1994). Out of the three phases of strategic process, implementation is the most problematic phase, which usually creates the most serious difficulties among employees due to basic issues such as doubts, confusions, lack of goal clarity, inability to use resources (Gębczyńska, 2016).

Functional level strategy is a well-established theoretical construct, which is widely referred to across multiple disciplines such as accounting, management, marketing, economics, computer science and operations. To capture the current understanding on functional level strategy we reviewed ABI/INFORM database which has U.S. and international coverage of over 1,300 business publications, with full text articles about business conditions, trends, corporate strategies and tactics, management techniques, competitive and product information, and more. We ran four advanced searches. Our search criterions were:

1. ab (functional level strategy): articles with words - functional, level and strategy in abstracts AND pub (accounting): publications with word accounting in titles.
2. ab (functional level strategy): articles with words - functional, level and strategy in abstracts AND pub (management): publications with word accounting in titles.
3. ab (functional level strategy): articles with words - functional, level and strategy in abstracts AND pub (business): publications with word accounting in titles.
4. ab (functional level strategy): articles with words - functional, level and strategy in abstracts AND pub (strategy): publications with word accounting in titles.

5. ab (functional level strategy): articles with words - functional, level and strategy in abstracts AND pub (strategy): publications with word accounting in titles.

We have provided a brief analysis of findings from the above searches in the following table:

Publication title	Interview	Survey-based	Case studies	Literature review	Qualitative	Quantitative	Total
Strategy	0	0	0	0	0	0	0
Strategic	3	3	2	1	6	3	9
Accounting	0	1	0	0	0	1	1
Management	9	29	13	8	30	29	59
Business	1	8	3	6	10	8	18
Total	13	41	18	15	46	41	87

Table 1: Current publications on subject matter

Although, 87 articles across 4 different disciplines in last five years seem like a healthy quantity of studies. However, out of these 87 articles only 1 article actually have the words ‘functional level strategy’ as a construct in abstracts. Other 86 articles have all those three words ‘functional’, ‘level’ and ‘strategy’ in abstracts but not in that specific order, nor even any two of the words out of three from in back-to-back word setup in a sentence. However, the words ‘functional integration’ are in 4 articles. So, in a broader sense 5 articles have been published in last five years across four different disciplines on specifically on functional level strategy. In these five studies only one is an empirical study. None of these articles shed any lights on three stages of functional level strategy process, its alternative forms, how these processes serially mediate performance and lastly moderated influence of contextual factors, which our studies have established with empirical evidence. Another important contribution of this study is to rethink conditional influence of organizational structure and organizational culture which are seemingly taken for granted. However, this study does not identify any conditional influence of these two contextual factors on the serial mediation between stages of functional level strategy process and performance. This absence of conditional influence of structure and culture is understandable because at functional level chain of commands are usually flat and controlled. Also, due to sample being extracted from

Oil and Gas sector, room for mistakes is low, twined with routine oriented process do not require assistance from organizational culture. Therefore, rather than predetermined which contextual factors work, we should identify what contextual factors are present, and then work on them. In this study we addressed this research gap by carrying out advanced statistical analyses based on a conceptual model which accommodate a set of management controls to study predictive dynamics between functional level strategic process and operational performance.

2.3 Alternative forms of functional level strategic process

Following on the seminal work of Mintzberg and colleagues (Mintzberg and Lampel, 1999, Burgelman, 1984)), numerous authors have conceptualized and empirically tested alternative strategy processes capturing both the deliberate and emergent or incremental aspects. Some researchers have also examined how effective these alternative processes are in terms of achieving desired organizational outcomes (Huff and Reger, 1987; Rajagopalan et al., 1993; Hutzschenreuter & Kleindienst, 2006). Among those that have particularly focused on functional level strategy processes are Barnes (2002); Kim et al. (2014), Lofving et al. (2014), Rytter et al. (2007), Sting and Loch (2017) and Swamidass et al. (2001). These studies have collectively suggested that firms display multiple alternative strategy processes, which could be equally effective in achieving organizational goals under specific circumstances. However, these studies, for the most part, have not provided any specific insights into how strategy processes influence operations performance. Furthermore, despite the early acknowledgement of the alternative forms of strategy process, there have not been well-articulated alternative models of functional strategy process available in the literature (Kiridena et al., 2009).

Strategic decisions and relevant actions may take various forms of deliberate and emergent processes, and these decision makings could follow either top-down, bottom-up or middle-up-down paths (Adamides, 2015; Kiridena et al., 2009; Rytter et al., 2007). To avoid complexities of these numerous forms of decision-making managers usually seek for consistent patterns in decisions and actions pertaining to the development of resources, capabilities and work practices that deliver superior performance (Acur and Bititci, 2003; Bititci et al. 2011). Strategies are developed through structured analysis of organizational capabilities, that are reflected through the usual patterns represented by actions such as responding to market opportunities or urgent

operational issues (Terpend et al., 2011; Elbanna, 2006; Wheelwright and Hayes, 1985). During functional level strategic process managers try to develop a clear set of actions/ meta-routines/ capabilities through which they attempt to implement the strategies. This ‘practice of strategy’ is also known as strategy-as-practice, strategizing and micro-strategy.

Kiridena et al. (2009) constructed three conceptual schemas representing linear and parallel, converging and diverging and sequential and iterative progression of strategic initiatives across four distinct phases, which they labelled as initiation, consolidation, commitment and realization (see Table 1). These multiple modes of initiation, alternative paths of consolidation and differing forms of commitment and realization show three alternative forms of functional level strategic processes, which are: forced, opportunistic and evolutionary (Jofre, 2011; Jagoda et al., 2016). Categorization of these three modes of functional strategic process is rooted to its initiation. That is: Forced strategic process is normally initiated by: parent company directives, top managers’ initiatives, reactions to competition, regulatory compliance; Opportunistic strategic process is normally initiated by: event triggered, technology-driven, Market or customer-driven, entrepreneurially driven; and Evolutionary strategic process is normally initiated by: growth-based, improvement needs, operational problems, intrapreneurial behavior. These alternative forms of functional level strategies are broadly consistent with the findings of previous empirical studies (Sarmiento et al., 2008; Rytter et al., 2007; Verreyne, 2006; Barnes, 2002; Swamidass et al., 2001). Also, these three modes of strategies reflect multiple operation strategic processes (such as - managerial interpretation, adoption of best practices; and operations improvement alternatives etc.), which not only represent the extant literature but also capture the functional level strategic process with an appropriate level of detailing.

Process	Initiation	Consolidation	Commitment	Realization
Forced	Parent company directives Top managers initiatives Reactions to competition Regulatory compliance	ENFORCED: Adaptation Charismatic influence Position power	AUTHORISATION: Based on formal authority	EXECUTION: Compliance
Opportunistic	Event triggered Technology driven Market or customer driven Entrepreneurially driven	NEGOTIATED: Political maneuvering Balance of forces Rational choice	AUTHORISATION: Confirmation of dominant view AFFIRMATION: Forced	IMPLEMENTATION: Interpretive process
Evolutionary	Growth based Improvement needs Operational problems Intrapreneurial behavior	CONSENSUS BUILDING: Collective agreement learning by doing	AFFIRMATION: Voluntary (aspiration)	ACTIONING: Cumulative effect

Table 2: Alternative forms of functional level strategic process (Jagoda et al., 2016)

Although, these studies have identified the core constructs of functional level strategy processes and captured the alternative forms of strategy process, they failed to provide any predictive evidence supporting the linkage between each strategic process. Also, it segmented strategic process into four stages instead of three. Theoretically, consolidation and commitment are part of progression stage. Based on this understanding I would like to suggest that at functional level there are alternative forms of strategic process and each form(s) of process follow the sequential stages of – 1) initiation 2) progression and 3) realization.



Figure 2: Three stages of functional level strategic process

2.4 Strategic process and Performance

With ongoing changes in the broader business environment, as well as shifting priorities within the organization, managers constantly evaluate their respective functional domains and its contribution to firm's competitiveness and performance. They often focus on the adoption of "best practices" (Laugen et al., 2005; Terziovski et al., 2002) and new technology in the context of continues improvement of operations, as well as alignment of strategic priorities across functions (Calantone et al., 2002). This means, the way strategically significant decisions are made, and actions are taken determine the capability of the functional units concerned in terms of contributing to and supporting the chosen competitive priorities of an organization. Communicating strategic priorities and maintaining strategic coherence across the functions are by nature interactive, as a result subjective. In practice managers interaction with his/her fellow employees are very much influenced by company's culture, chain of command, industry's norms, past practices, emergent concepts, and several other aspects which are perceived and understood differently by different individuals. So, it can be implied that strategic priorities and coherence techniques developed/implemented by managers are also influenced by similar environmental aspects, and therefore, more adaptive in nature.

Early scholars such as Skinner (1969) identified the crucial role of strategic priority in the formulation and implementation of corporate strategy. Strategic priorities can be defined as mutually selected key competitive capabilities that are usually driven by common dimensions of functional strategy, such as - quality, price/cost, dependability/delivery, and flexibility (Wheelwright, 1984; Hayes and Wheelwright, 1984; Ward and Duray, 2000). Dess (1987) suggested that coherence among strategic priorities should lead to positive performance, because, during the difficult periods a 'unified direction' for the organization becomes of primary importance. Strategic priorities are functional constructs that represent the business strategy during the functional strategic process (Bowman & Ambrosini, 1997). In similar vein, Porter (1985, p. 25) suggests that - 'the generic strategy specifies the fundamental approach to competitive advantage a firm is pursuing and provides the context for the actions to be taken in each functional area.'

Strategic coherence is positively related to employees understanding of managerial strategic decisions/decision making patterns. This is due to reduction in subordinates perceived task uncertainty and job-related stress, as a result it makes the strategic implementation easier and firm's performance better (Ho et al., 2014) In this context, strategic success is not only assured by the coherence between the current strategic priorities and the actions undertaken, but also by the experience of the company in using the specific strategies (Cagliano and Spina, 2000). Existing information of already-executed strategies adds consistency to the strategic priorities by providing higher awareness and ability to the managers to understand which practice is more suited to the environment in order to get the desired results and increase the likelihood of strategic implementation. In short, managers need to develop strategic priorities that are required/influenced/accepted/suggested/forced by the environment, and consequently, translate these priorities for the functional level employees.

Although strategy-performance nexus is a widely cited topic, recent studies examining the relationship between strategy process and performance have been few and far between (Akgul et al., 2015; Kouamé and Langley, 2018; Lee et al., 2014). Power (2005) identified strategy development process as a key determinant of supply-chain-related performance and that the nature and strength of the influence of strategy process on performance is situational. Verreynne (2006) found that out of the four strategy-making processes they studied, namely adaptive, intrapreneurial, participative and simplistic, the simplistic model had the strongest co-relation with the performance of small firms. Gunby Jr (2009) found the enforced choice and political strategy development processes to have a stronger relationship with performance in for-profit firms compared to other process types (i.e. command, planning, cultural and incremental) considered in their study. In an empirical study of functional level strategy and performance, Lee et al., (2014) found support for a strong positive relationship between manufacturing strategy formulation and plant performance, mediated by manufacturing strategy implementation and manufacturing-marketing integration.

Strategic management literature (Curto and Pinto, 2007; Venkatraman et al., 1993; Miller & Friesen, 1982; Miles & Snow, 1978) argued that higher performance can only be achieved if firms align managerial practices with the strategic priorities of the organization. Development of performance measures is rooted to company's vision and strategy in question (Kaplan and Norton,

1993). Considering the fuzziness surrounding goals and problems while defining and implementing a successful strategy, it is suggested that strategic performance management has more to do with arbitrariness and retrospective sense-making than with rational decision making (Tuomela, 2005). Based on these work and others (Venkatraman, 1989, Gerdin & Greve, 2004; Chenhall, 2005; Van der Stede et al., 2006), it could be suggested that at functional level strategic process employees channel their strategic actions and behaviors in accordance with performance measures or at least they should do so to achieve superior performance. For example, during economic downtime a firm's business strategy is to become cost effective (prioritizing of certain performance measure) and this could only be achieved if this intention is properly communicated to the functional level managers and employees. Based on this understanding I would like to suggest that at functional level strategic process follow the sequential stages of – 1) initiation 2) progression and 3) realization, and by fulfilling requirements of each stage we progress, execute strategy and influence operational performance.

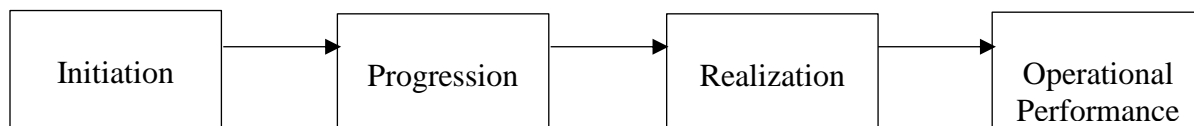


Figure 3: Relationship of functional level strategic process and operational performance

2.5 Strategic process, Performance and Management Controls

Interaction between controls and strategy is one of the most continuing arguments in management accounting literature (Bedford et al., 2016). Existing studies suggest that different strategic priorities require specific sets of controls to ensure its effectiveness (Govindarajan, 1988; Otley, 1999; Chenhall and Euske, 2007; Langfield-Smith, 2007; Tucker et al., 2009). This should be applicable to functional strategy as well. This implies that employees, to achieve desired performance not only need to direct their activities in accordance with prioritized performance targets, but, there should also be some controls to keep the activities on right track. In relation to the appropriate use of performance measurement systems and their effects, contingency theory suggests that the fit between contextual factors and the design of management control systems is

relevant to superior performance (Chenhall, 2003; Ittner and Larcker, 1997; Langfield-Smith, 1997; Luft and Shields, 2003).

The extant literature suggests that strategy process is influenced by a range of situational factors both internal and external to the organization. The internal organizational factors widely cited in the literature include firm size, the stage of firm development, organizational structure, organizational culture, and leadership (or management) style (Barnes, 2002; Bititci et al., 2004; Slevin & Covin, 1997; Mills et. al., 1995; Papadakis et al., 1998). Factors in the external environment include industry structure, level of competition and market conditions (Akgul et al., 2015). The interplay between management controls and strategy is also a widely discussed topic in management accounting literature (Bedford et al., 2016; Reimer et al., 2015). Existing studies suggest that different strategy priorities require specific sets of controls to ensure their effectiveness (Otley, 1999; Chenhall and Euske, 2007; Tucker et al., 2009). Through their engagement in the functional level strategy process, middle managers typically prioritize their decisions and actions to optimize specific aspects of performance considering a given set of conditions (Lavarda et al., 2010; Wooldridge et al., 2008; Shi et al., 2009). Therefore, the role of middle management has also been identified as a key factor that determines the effectiveness of strategy execution.

Simons (1995) described management controls as the means by senior managers to successfully implement their intended strategies, others have defined it as the systematic use of management accounting in combination with other forms of control (such as personal or cultural controls) to achieve some goal (Chenhall, 2003). Simons defined management control system as a formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities (Simons, 1995b). His framework is based on four levers of control that are: beliefs system, boundary systems, diagnostic control systems, and interactive control systems. Although, these four control levers have different purposes, but they are nested as they are working simultaneously. A core idea in this strategic control framework is that it balances needs for innovation and constraints. According to Simons (1995a, 1995b): Belief systems are used to enhance core values related to business strategy; Boundary systems decrease risks by setting boundaries to strategically undesirable behaviors; diagnostic control systems evaluate, communicate and monitor critical success factors; and interactive control systems discuss strategic

uncertainties and through that dialogue employees learn new/existing strategic responses to a changing environment. While beliefs systems and interactive control systems are exercised by managers to encourage innovative behavior and proper understanding, whereas boundary systems and diagnostic control systems are used to make employees behave according to pre-established rules and plans (Simons, 1995a, 1995b). For this study we are going to emphasize on interactive control system because it deals the uncertainties and disruptions of strategic process.

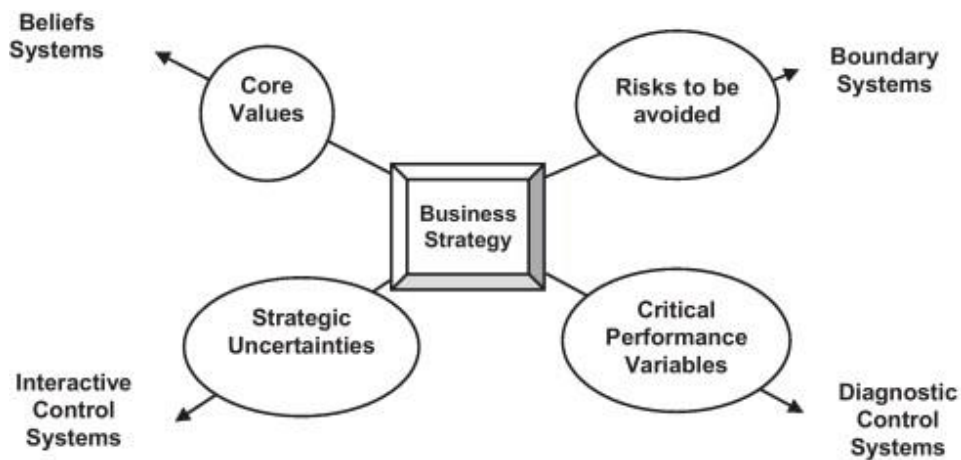


Figure 4: Simons levers of controls

2.6 Strategic Interaction

Performance targets and measures

Performance measures as a management accounting tool, is designed not only to evaluate organizational outcomes, but also to provide directions about strategic activities (Chenhall, 2005). Aligning performance measures with the strategic priorities of the firm could ensure effective strategic implementation and better performance (Gimbert et al., 2010; Van der Stede et al., 2006; Chenhall, 2005; Ittner et al., 2003). It also communicates strategic priorities of the firm to functional level managers and their subordinates by: a) providing a framework to ensure that adequate resources are available at operational level to achieve firm's long-term goals and strategies, b) specifying the cause-and-effect relations between corporate priorities and profit, c)

setting standards to locate areas of weakness and prompt operational improvements, d) providing information about the needs and demands of the external environment (e.g. customers, suppliers), and e) improving the efficiency in contracting with lower-level managers (Miller and Friesen, 1982; Ittner et al., 1997; Simons, 2000; Verbeteen & Boones, 2009).

The combination of cultural controls and intense interactive use of performance measures is crucial for business progression (Einhorn et al., 2021). There is an ontological debate whether performance measures are diagnostic or interactive controls (Kaplan and Norton, 1996a, 2001; cf. Simons, 1999). Nonetheless, when discussing functional strategic process, where managers heavily need to rely on interactions with their employees to address strategic priorities and maintain informational coherence across the functions, then interactive use of PM seems more pertinent to the context than diagnostic. Performance measures play a key role to bind the dimensions of change, as they have the potential to organize, monitor and manage the alignment of corporate strategies with micro business processes. Performance measures are integral part of an organization, which interact with the organizational structure to increase control and ensure positive performance (Waterhouse and Tiessen, 1978). Studies suggest that managers can have much greater effects on employees when they provide employees with appropriate and easily understandable information about targets (Forza and Salvador, 2000). Which means that firm's ability to successfully develop and communicate PM in accordance with its strategic priorities is crucial for the performance.

Based on aforementioned studies and others (Venkatraman, 1989, Gerdin & Greve, 2004; Chenhall, 2005; Van der Stede et al., 2006), I want to suggest that at functional level strategic process employees channel their strategic actions and behaviors in accordance with the performance measures or at least they should do so to achieve superior performance. For example, during economic downtime a firm's business strategy is to become cost effective (prioritizing of certain performance measure) and this could only be achieved if this intention is properly communicated to the functional level managers and employees. Therefore, to implement strategy managers must develop PM (both formal and informal) based on strategic priorities. PM, when used as an interactive control, transmit prioritized set of strategic objectives, and communicate it to the employees, and when the managers successfully manage to communicate these PM across all the functions, then the strategic coherence is achieved. Through performance measure senior management can interact information with employees that are consistent with the strategic

priorities and uncertainties (Merchant & Van Der Stede, 2007). Performance measures (PM) as a management accounting tool, is designed not only to evaluate organizational outcomes, but also to provide directions about strategic activities (Chenhall, 2005). These directions are achieved through meaningful dialogues in online meetings and intelligent argument on the underlying data and patterns that tie the firm and partners together. Aligning PM with the strategic priorities of the firm could ensure effective strategic implementation and better performance (Gimbert et al., 2010; Van der Stede et al., 2006; Chenhall, 2005; Ittner et al., 2003). PM is theoretically developed to guide managerial interests and behavior into the path of strategic priorities (Chenhall, 2005; Ittner et al., 2003).

Management controls

One specific characteristic of interactive control is that it is heavily used by top management but also commonly used by lower-level managers (Tuomela, 2005), therefore, the shared familiarity of interactive controls will allow managers (across the function) to interact (with each other and employees) more fluently and disseminate the strategic priorities through performance targets. A second important feature of interactive control is that these systems are used throughout the organization and on frequent basis, which is germane to functional level strategic process. Thirdly, interactive control systems are used to encourage and provoke discussion and the emphasis is on learning. At functional level strategic process, employees need to be cleared about assigned goals, changes in external environment, internal uncertainties, restructuring and other factors which might influence the ways these employees are supposed to perform their tasks. Existing studies already established that interactive controls increase visibility of functions and sustain employee's engagement because it is: (1) intensively used by senior managers (Naranjo-Gil and Hartmann, 2007), (2) extensively used by operating managers (Abernethy and Brownell, 1999), and (3) it ensures frequent communications between senior management and functional unit managers (Naranjo-Gil and Hartmann, 2007). Interactive controls are designed to create internal pressure which necessitates higher frequency of interactions within changing environment (Simons, 1995). He further suggested that interactive controls should be used to alert employees on current strategic dialogues. Interactive controls could also be used to signal the importance/directions of strategic uncertainties (Bisbe and Otley, 2004). In simple words, interactive control systems are fostering and measuring instrument for senior managers.

Through interactive controls senior managers announce/signal the firm - what are the priorities, what are relevant uncertainties, whom to discuss prioritized issues, KPIs etc. It also could keep track on frequency of meetings/submissions/deadlines. Although, Simons's (1995) work has been analyzed extensively with intraorganizational management control literature, but it did not gain much attention when it comes to interorganizational settings. It is also surprising because earlier studies (Smith et al., 1995; Dekker, 2004) have established that success depends, to a large extent, on the quality of communication between partnering firms (Caglio and Ditillo, 2008). Simons' interactive use of management controls involves continual dialogues and exchange of information among inter-organizational levels, in which complications are dealt through arguments but in a facilitative and supportive manner (Simons, 1995; Abernethy and Brownell, 1999; Bisbe and Otley, 2004). Eddleston and Kellermanns (2007) suggested that interactive decision making with employees promote open exchange of information, which is positively related with performance. Also, senior managements use of interactive controls increase opportunity-seeking behaviour and timely learning (Bisbey and Oatley, 2004), which in my opinion are crucial skills to deal with disruptive environments. Therefore, it is very vital for firms to use interactive control systems to keep alert functional managers across the firm and with partner firms.

2.7 Management controls as moderator

A broader definition of management control system entails the entire strategic process, which includes both strategic formulation (Mintzberg, 1978) and strategic implementation (Merchant and Otley, 2007). Literature suggests that a match between the environment, strategy, and controls such as management control system is associated with higher performance (Govindarajan, 1988; Govindarajan and Gupta, 1985). However, different strategies and plans require changes to control configurations (Otley, 1999) according to the contextual needs. Managers use various management controls that they inherit/develop from the internal environment of the firm to compete in the external environment. Lack of appropriate management controls could lead to failure to communicate strategies and plans to employees across the functions (Merchant and Van der Stede, 2007) and this which could create a lack of understanding of how individual employees contribute to the overall corporate strategy.

As mentioned earlier, lever of controls has various uses, but by fostering dialogue and feedback, and interactive use of management controls helps managers to expand the firm's information processing capacity (i.e. coherence) and accordingly the deployment of organizational priorities (Haas and Kleinngeld, 1999). A wider involvement of lower echelons of management in the strategic process is likely to result in greater understanding the strategic intent, acceptance of the path/patterns and, more importantly, provide for broader organizational alignment (Ferreira and Otley, 2009). Contextual factors such management controls will have significant effect on the design of performance measures (Broadbent and Laughlin, 2007) and therefore, it could be implied that managers selection of industry prioritized performance measures will be conditionally influenced by management controls.

Empirical evidence suggest that strategy process is contingent upon such diverse contextual factors as the nature of the business (product-market aspects), organizational structure, level of competition, firm size, the stage of firm development, organizational culture, as well as the personal profile/attributes of the decision makers involved (Barnes, 2002; Slevin & Covin, 1997; Mills et. al., 1995; Papadakis et al., 1998). More recent literature (Kiridena et al., 2009; Kiridena and Jagoda, 2013; Jagoda et al., 2016) suggests that studying functional strategic processes in their broader context also means exploring the effects of a range of organizational and environmental contextual factors. Based on grounded approach, these studies identified five internal contextual factors - firm size, firm type/ownership, stage of firm development, organizational structure, and organizational culture - which influence the relationship between functional strategic process and performance. For this thesis I am going to examine - do controls conditionally influence the relationship between process and performance, and if it do, then which combinations of process and performance under the moderation of such controls would give firms' agility and effectiveness. Based on my theoretical understanding I think it will be interesting to study –

- 1) Organizational structure: although it has long been established in literature that structure of the company conditionally influences the relationship between strategy/process and performance, however all of them has been done at corporate and business level, or within the hood of operations strategy, which can't be generalized across functions.

- 2) Organizational culture: Cultural controls establish patterns, common language of dialogues and promote company's approved attitudes and behaviors. Therefore, it is reasonable to examine its moderating effect on functional level strategic process and performance.
- 3) Extensive use of information technology: it is pertained to check how information technology pans out within the mix of process and control, especially in current global scenario.
- 4) Employee participation in budget: budget as a management tool is heavily related to performance measures and its optimum use. Budgetary participation also increases the possibility of frequent meetings and intra-function communication.

2.7.1 Organizational structure

Organization structures are formed as means of establishing individual employee's roles and tasks to be carried out (Chenhall, 2003) and in doing so, they posit power and trust to employees to act within their sphere of responsibility. In other words, organization structures are resources and rules that both facilitate and restrain how actors behave in social settings. Organizational structures are part of organisational social systems that exhibit three characteristics: (1) Structures – systems of resources and rules (2) Modality – the means of structures producing action (3) Interaction – actions of organisational members who operate within these structures (parker and Chung, 2018). Organizational structure determines the responsibilities and accountabilities of organizational participants; it equally addresses the activities that individuals with specific roles should not pay attention to (Ferreira and Otley, 2009). As a management control, organizational structure deals with issues such as reporting relationships, interactions between employees, information flows, and authority distribution with regard to carrying out activities within the organization (Burns & Stalker, 1961; Galbraith, 1973; Germain, 1996; Hall, 1987).

There are various forms of organizational structure, such as -decentralization/centralization of authority, differentiation/standardization and mechanistic/organic to name a few. However, central idea of all these categorizations falls under a general spectrum: from rigid to flexible. Firms with mechanistic organizational structure tend to have more organizational levels, higher centralization, more formal rules, a narrower control range, and a greater reliance on vertical instruction in communication, whereas firms with organic structures have fewer levels in the hierarchy, greater

decentralization, fewer formal rules, a wider control range, and a horizontal mode of communication (Tosi and Carroll, 1976; Hage, 1980; Nahm et al., 2003). A decentralized structure distributes authority to large numbers of lower level managers, whereas a centralized structure focuses decision making authority at the headquarters level with the involvement of few managers. organizational structure is likely to play a positive role in affecting the usage of management controls such as performance measures. Compared to centralized firms, decentralized structures are likely to require a greater volume of information at lower levels of management to assist in decision making relative to centralized firms. Therefore, decentralized firms would have a greater need for interactive performance measures, which will provide information about strategic priorities to help lower-level managers in their decision-making processes to implement strategy.

Lee and Yang (2011) suggest that organic structures have two specific features (French and Bell, 1984): 1) adaptive and flexible with regards to tackling new problems or opportunities in task assignments, and 2) utilize decentralized authority and control to encourage widespread communication within the firm. Both aspects create information processing requirements for proper coordination, communication and control at lower levels (Galbraith, 1973; Gordon and Narayanan, 1984). Since an organic organization has a higher level of integration than a mechanistic one, it is required to integrate and coordinate SBUs with all the functions, therefore, possibility of strategic coherence is higher than the mechanist one. In addition, it uses a PM that contains non-financial and financial measures, focuses on the external conditions, and can generate extensive information (Kaplan & Norton, 2001; Scott & Tiessen, 1999). This also allow various functions to have a comprehensive understanding of the performance information in their units which meanwhile is also communicating firm's strategic priorities. In organic structures, decision-making is assigned at lower levels and managers and employees have access to information which is not available to their superiors (Lee and Yang, 2011). The literature also suggests that employees in organic structures will have greater commitments to firm's policy if communication is open and flows freely (Chenhall and Morris, 1995), which might get distracted in mechanistic setup due to hierarchical complexities.

The relationship between organization structure and strategy seems to be bi-directional (Ferreira and Otley, 2009). Studies suggests that structure needs to be matched to strategy (Chandler, 1962; Chenhall, 2003; Thompson and Strickland, 2003) (e.g. diversification strategies requiring

divisional structures); whereas, other suggests that structure precedes strategy to the extent that it limits the scope and the authority of managers to develop strategies (Donaldson, 1987). At functional level, where the strategic process is pacier and shorter than the corporate and SBU strategy, structure seems to precede strategy. Strategy and structure are mutually interdependent in a way that they both constrain and support each other. Existing literature indicates important links between organizational structure and performance measures, which have been argued to be two of the most important design decisions made by managers (Abernethy et al., 2004; Langfield-Smith, 1997; Luft and Shields, 2003). Studies suggest that strategy and performance measures are related (Chenhall, 2008, 2005; Ittner et al., 2003; Kaplan and Norton, 1996, 2001; Otley, 1999). For instance, in an organic structure, managers will have more freedom and appropriate setup to use performance measures as an interactive control to disseminate strategic priorities across the functions which in turn will ensure strategic coherence. Whereas, in a mechanistic structure, the interaction between managers and their employees are more formal and rational.

2.7.2 Organizational culture

In accounting literature, the involvement of accounting practices in terms of changes of organizational culture seems to be well accepted (Van der Stede, 2003; Baird et al., 2004; Henri, 2006; Busco et al., 2007). Researchers suggest that relationship between culture and performance is influenced by the way organizations search for and use information such as management accounting tools (Stoica et al., 2004) Schein (1999, 2009, 2010) conceptualized organizational culture as an institutionalized element which binds and keep employees informed through ongoing processes of social interaction. Culture consists of values, beliefs, attitudes and behavior that people acquire by common learning and experience in a group (Hodgetts and Luthans, 1997, p. 96). Hofstede (1980, p. 25) defined culture as “the collective programming of the mind which distinguishes the members of one group or society from those of another”. Organizational culture could be defined as a set of processes that binds together members of an organization based on the shared pattern of basic values, beliefs and assumptions in an organization (Smircich, 1983; Ducan, 1998; Schein 1992; Anthony, 1999; Ireland and Hitt, 1999).

Organizational culture is a source of sustained competitive advantage (Barney 1991) and empirical studies show that it is a key factor to organizational effectiveness (Deal and Kennedy, 1982; Denison, 1990; Gordon and Di Tomaso, 1992; Peters and Waterman, 1982) and predictive of

company performance (Hartnell et al., 2011). Employees who belong to the same organizational culture are more likely to think and behave similarly in key respects. Culture has become important in the design of management controls in recent past, as majority of the companies have developed multi-national operations. Organizational culture pervades the entire control system by influencing choices and behaviors of individuals (Hofstede, 1984; Trompenaars and Hampden-Turner, 1997). It is a dominant characteristic of Anthony et al.'s (1989) informal controls, Hopwood's (1976) social controls, Merchant's (1985) personnel controls, and Ouchi's (1979) clan controls. culture interacts with organization's structures and control systems to produce behavioural and attitude norms (Uttal & Fierman, 1983).

Success of management controls could be understood by examining how the control culture, organic or mechanistic, influences the processes of implementation (Chenhall, 2003). Chenhall (2003) further suggested that this becomes particularly important when we are discussing about innovative management controls such as activity-based accounting, balanced scorecards, performance measures which are closely linked to the organization's control Culture. Management accounting tool such as performance measures are integral aspect of the internal processes and can be relevant in enhancing performance in different cultural situations (Simons, 2000; Bisbe and Otley, 2004). Traditionally, in accounting literature culture is discussed primarily associated within specific types of control systems (belief systems and boundary systems) (Simons, 1995; Ouchi, 1979; Merchant, 1985). However recent research suggests culture cannot be restricted under certain type of control, rather it depends on the contexts which determine the proper combination of management control (including culture).

Culture could reinforce the strategy and structural design necessary to be effective within its environment (Draft 2007). Like strategy, organizational culture has two core functions which are vital to the survival and the growth of an organization, that are - external adaptation and internal integration. Organizational culture could be one of positive factors of competitive advantage if it combines well with the elements of tacit knowledge, social interconnections (i.e. coherence), and specificity (i.e. priorities) (Barney 1986; Wilderom et al. 2000; Zheng et al. 2010). Studies suggest that the company's which built its culture through communicative and instrumental rationalities, has a more direct and significant effect on the use of performance measures. Kiridena and authors

(2009) identified that at functional level of strategy, company's exhibit two kinds of culture/workforce character, they are: cohesive/flexible and adversarial/entrenched.

A cohesive culture entails employee empowerment and freedom, which help building trust among peers. A flexible culture means team members feel comfortable sharing with each other and asking for, as well as offering, support. Culture is the collective mindset, attitude, and behavior, which are based on partly by passion and partly by commitment, and partly by believe, and a cohesive culture welcomes all these in a synergistic to improve organizational maturity and ensure performance. Whereas, in an adversarial/entrenched culture, employees is more likely to feel forced/instructed rather than driven and passionate to carry out task and responsibilities. Lack of dialogues and feedbacks would create a fuzzy idea about performance targets and strategic priorities, which is likely to derail the strategic implementation process. In other words, in a cohesive/flexible culture, manager is likely to have more freedom and appropriate setup to use performance measures as an interactive control to disseminate strategic priorities across the functions which in turn will ensure strategic coherence. In an adversarial/entrenched culture, the interaction between managers and their employees are more formal and rational (to whatever extent), which would restrict the possibility of subjectivity and shape the behavior in a more transactional manner rather than the relational approach, and as a result the strategic priorities might not get communicated across the functions, and even if it does, then the process time will be much lengthier than an organic structure, and in the context of functional strategy, time is really expensive.

2.7.3 Extensive use of information technology

Firms face challenges of integrating information technology into management accounting practices (Olsen and Cooney, 2000). It has been widely suggested that there are links between management accounting systems (i.e., performance measures) and Information technology (Chenhall, 2005). Burns and Vaivio (2001) argued that IT aids to the innovation and change in the collection, measurement, analysis and communication of information within and between organizations. IT innovations such as enterprise resource planning systems, e-commerce, the Internet, electronic data interchange, supply chain management and customer relationship management have been implemented and provide a rich source of information for management accounting. Although, IT is usually developed and introduced by non-accountants, it is still closely

connected with the accounting processes (Chapman and Chua, 2000). IT is crucial to modern business, especially regarding the accounting functions (Efendi et al., 2006), and management control (Dechow et al., 2007). According to Sadagopan et al. (2003), some of the most ordinary accounting processes which are incorporated in an information technology system include: general ledger, accounts receivable, accounts payable, financial control, asset management, funds flow, cost centers, profit centers, profitability analysis, order and project accounting, product cost accounting, and performance analysis; and it influences all areas of accounting.

Firms with a high level of IT integration across different functions usually can communicate, combine, and process external data better. It also helps these firms to share data among various internal systems (e.g., forecasting, production, accounting) and to retrieve information from various databases to make decisions (e.g., cost information, reporting tools). Banker et al. (2008) suggest that IT enables unique organizational routines and is often developed with intended strategic priorities to specific functions. IT also helps firm performance by enhancing the quality and effectiveness of organizational decision making. For example, IT can facilitate more rapid identification of problems and opportunities and can provide organizational intelligence that is more accurate, comprehensive, timely and available (Molloy and Schwenk, 1995). This relationship is further suggested by other authors such as Bresnahan et al. (2002), who found that a positive association exists between aggregated measures of technological IT use and organizational performance.

From this theoretical basis, we can suggest that firms with extensive (and advanced) use of IT has a higher level of integration across all the functions compare to the ones where IT use is low, therefore, possibility of strategic coherence is higher when firms properly use IT. This also allow various functions to have a comprehensive understanding of the performance information in their units which meanwhile is also communicating firm's strategic priorities. Whereas, firms where IT use is low, the interaction between managers and their employees are more formal and rational (to whatever extent), which would restrict the possibility of subjectivity and shape the behavior in a more diagnostic manner rather than the interactive approach.

2.7.4 Employee participation in budget

Organizations regularly use budgeting as the key source for communicating, planning, motivating, and evaluating performance. The ways in which budgets are formulated and administered have impact on the achievement of organizational goals. As mentioned earlier, various forms of dysfunctional behavior take place across many accounting contexts, and these behavioral inconsistencies should be managed properly for organizational effectiveness, particularly during the budgeting process (Hofstede, 1967). During budgeting process management tries to communicate the goals of the organization and strategic priorities to the appropriate employees. Budget along with performance measures facilitate, coordinate and control various parts of the strategic activities to achieve the desired outcomes through employee's effort. Hansen and Van der Stede (2004) suggested that through budgeting process managers translate long-term strategic plans of the firm into short-term operating budget.

One of the fundamental purposes of the budget is to provide a means by which managers can deal with abstract and complex strategies (Anthony and Govindarajan, 2007). As majority of the managers participate strategic planning, therefore, they could convincingly communicate the strategic priorities and consequentially develop the means (i.e. the budget) needed to achieve those goals. There are two paradigms of budgeting that are commonly implemented in organizations, which are - authoritative and participative. These budgets mainly vary in the level of effort supervisors put to involve employees to formulate and finalize the budget (Shields et al., 2000). Although studies suggest that budgetary participation can improve organizational outcomes, but these studies did not clarify what type of budgetary participation is suitable for which contexts. The effectiveness and execution of budgeting depends on how well the employees can identify strategic priorities, allocation of responsibilities to attain these goals, and its execution process (Drake and Fabozzi, 2010). So, it can be assumed that better employees understand the strategic priorities, more probable it is for them to implement the strategies.

Participative budgeting is implemented to create a smooth bilateral flow of information, where employees submit budget requests that are put into account by their superiors when while deciding the budgets (Gallani et al., 2015). If there is any difference between employee provided budgets and the approved budgets, then supervisors provide explanation of these differences to their employees. From this we can assume that during participative budgeting supervisors and

employees engage in more open communication where both parties discuss about budgetary goals (and strategic priorities) and try to reach to a compliant level where supervisors can trust their employees with budgetary responsibilities. Employees have the highest influence (compared to the other two) on the budget preparation and execution (Hopwood, 1976; Gallani et al., 2015). However, Brownell (1981) suggests that researchers need to specify the conditions under which budgetary participation would be effective before investigating its consequences.

Research suggests that budgetary participation affects subordinate job performance through: (1) the increase in their budget goal commitment, and (2) the cognitive benefits derived from sharing internal information during the budget-setting process. On the other hand, Authoritative budgeting is implemented in order to create a unilateral information flow where superiors ask budgets (or budgetary information) from employees; despite the budgets are already approved, decided or pre-determined by the superiors (Baiman and Evans, 1983; Antle and Fellingham, 1995; McClenahan, 1995; Gallani et al., 2015). Under authoritative budgeting, approved budgets can be (and usually) very different from budget requests by the employees and supervisors not necessarily need to provide clarifications to their employees (Hopwood, 1976). Under this approach, employees have the lowest influence (compared to the other two) on the budget preparation and execution (Hopwood, 1976; Gallani et al., 2015); therefore, it is safe to say that they remain more aware about budgetary goals (i.e. low goal congruence).

From that we could derive that during authoritative budgeting supervisors and employees is less likely to engage in an open communication about budgetary goals (compared to the other two), which put employees in a position where they have less information and opportunity to compare organizational goals with personal goals. This consequently creates a non-compliant and confusing situation for employees where their understanding regarding organizational goals is lower compared to that of participative or consultative budgeting (i.e., low goal congruence). Furthermore, as these employees are not trusted by their supervisors with any concrete budgetary decision making, so the employees do not get the opportunity to incorporate their own ideas with that of organization's and therefore they are less likely to be satisfied with their responsibilities (compare to the other two) and more likely to engage in dysfunctional behaviors. From this theoretical viewpoint I can derive that during consultative budgeting supervisors and employees is more (than authoritative) or less (than participative) likely to engage in an open communication

about budgetary goals which might give employees some information and opportunity to compare organizational goals with personal goals (i.e. moderate goal congruence)..

Furthermore, as these employees are not entrusted by their supervisors with any concrete budgetary decision making, so the employees do not get the opportunity to incorporate their own ideas (i.e. goals) with that of organization's and therefore they are less likely to be satisfied with their responsibilities (compare to participative) and more likely to engage in dysfunctional behaviours (compare to participative but less likely than authoritative). So, cumulatively I would like to suggest that at functional level strategic process follow the sequential stages of – 1) initiation 2) progression and 3) realization, and by fulfilling requirements of each stage we progress, execute strategy and this process eventually influence operational performance, and the dynamics between management functional level strategic process and operational performance are moderated by management controls. To stay true to the focus of the study, which is implementation of strategy, we choose to emphasize on the final stage of functional level strategic process and did not provide details on how the initiation stage and progression stage of strategic process and operational performance would be moderated by management controls.

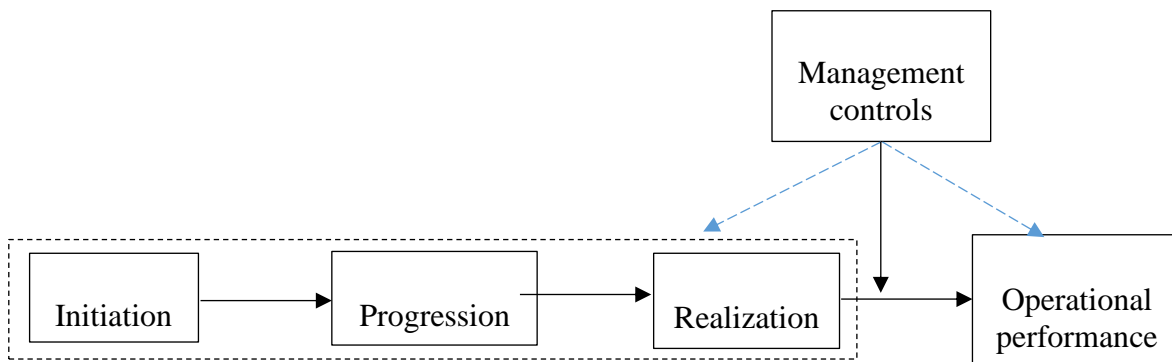


Figure 5: Conceptual model of the study

In summary, having considered the research gaps identified in the literature review, along with the opportunities presented by the recent developments in the field, we recognized the need for examining the relationship between alternative strategy processes, operations performance and contextual factors at the functional level of an organization. As such, the study reported on in this paper was designed to address the following research questions:

1. Is there more than one form of functional level strategic process (in practice)?
2. Does functional level strategic process (es) follow the sequential stages of initiation, progression, and realization?
3. Does functional level strategic process (es) influence operational performance?
4. Do management controls moderates the relationship between alternative paths of functional level strategic process and operational performance?

3 Research methodology

Strategy process studies traditionally employed qualitative approaches such as case studies, grounded theory and action research for capturing and theorizing the way strategies are formed and realized. These approaches have been quite effective in developing rich insights into how strategy decisions and actions are initiated, progressed and realized under the influence of a range of internal and external contextual factors. Many scholars have noted the importance of linking this descriptive understanding of strategy process to firm performance to draw more meaningful managerial insights, as well as explaining the performance implications of alternative strategy processes. However, given the intricacies (e.g., multiple paths of progression under varied conditions) of the process-performance relationship at the functional levels of abstraction, there are substantial methodological challenges associated with linking strategy process and management controls to operational performance. These challenges include, but not limited to, designing research instruments to collect empirical data at the appropriate level of detail, delineating cause-and-effect relationships and generalizing the findings to broader populations. This study employed statistical techniques that were cautiously selected to overcome the challenges referred to above to the best possible extent, while considering the constraints pertaining to the study. The three statistical techniques, namely, exploratory factor analysis, serial

mediations and moderated serial mediations are particularly aimed at accounting for the multiple paths of progression and their performance implications under varied conditions. The methodological approach followed in addressing the research questions is outlined below.

3.1 Hypotheses Development

Considering the multiple combinations of processes, performance priorities and contextual factors that are theoretically possible, we adopted a rather open and exploratory approach to data analysis. As such, we start with the following set of propositions/hypotheses, which will be further broken down into more specific, testable hypotheses in the Appendix 1.

Research question one

H - 1. (Exploratory factor analysis hypothesis): there are more than one forms of functional level strategy process.

Research question two

H - 2. (Mediation hypothesis): during functional level strategy process, there will be a significant indirect effect of initiation stage on realization stage through progression stage, such that progression stage will fully (or partially) improve (enhance) the relationship between initiation stage and realization stage of the functional level strategy process.

Research question three

H - 3. (Serial mediation hypothesis): in functional level strategy process, there will be a significant indirect effect of initiation stage on performance priority through causally linked multiple mediators of progression stage and realization stage, such that multiple mediators of progression stage and realization stage will fully (or partially) improve (enhance) the relationship between initiation stage and performance priority.

Research question four

H - 4. (Moderated serial mediation hypothesis): in functional level strategy process, contextual factors will moderate the indirect effect of initiation stage on performance priority through causally linked multiple mediators of progression stage and realization stage, such that when the organizational factor is higher (stronger), the effects are more pronounced (positive) compared to when factor is lower (weaker).

3.2 Measures of Key Constructs

Functional level strategic processes

To measure functional level strategy process, we first started with twenty-two questions, which were then revised based on the works of Kiridena et al. (2009) and Jagoda et al. (2016). Out of those eighteen items – nine questions were allocated to cover initiation phase of the strategy process, four questions to cover progression phase and five questions to cover realization phase. These questions were theoretically linked to the forced, opportunistic or evolutionary strategy process schema identified in the conceptual model proposed by Kiridena et al. (2009). The complete questionnaire used in the study is attached in Appendix 2. Generic patterns of questions are:

1. Initiation: how strategically significant decisions are usually triggered (by certain events)?
2. Progression: based on what events we develop plans to achieve organizational goal(s)?
3. Realization: how do we execute these plans (by utilizing our capabilities and resources)?

Responses range from 1 = strongly disagree to 5 = strongly agree

Operational Performance

We particularly focused on four performance dimensions: 1) Quality; 2) Cost; 3) Delivery; and 4) Flexibility. Twelve questions were used to measure operations performance. These questions were developed and then revised based on the works of Kiridena et al. (2009) and Jagoda et al. (2016). Out of those twelve items, four questions each were allocated to measure quality and cost, and two questions each were allocated to measure delivery and flexibility.

We asked the participants to indicate their assessment of operations performance compared to competitors, based on 5-point Likert scale. 1 = poor end of the industry to 5 = industry leader. In general terms:

For Quality: 1 being low product quality to 5 being superior product quality.

For Cost: 1 being higher cost to 5 being lower cost.

For Flexibility: 1 being rigid/too structured in operations to 5 being very adaptive.

For Delivery: 1 being inconsistent in delivery time to 5 being precise delivery timing.

Management Controls

Controls such as organizational structure and culture takes longer to develop, and when developed they are deeply rooted. Therefore, it takes longer for the influence to execute and to identify its impact on process and performance. On the other hand, controls like budget processes annually, often discussed among employees and usually reviewed on quarterly basis. Therefore, influence of it comparatively on purpose, on point (if it works!) and could be identified in comparatively short period of time. For this study we have selected four management controls:

- 1) Organizational structure (7 questions) (based on Jagoda et al., 2016)
- 2) Organizational culture (8 questions) (based on Kiridena et al., 2009; Goddard. 1986)
- 3) Employees' participation in budgetary activities (7 questions) (based on Nouri and Parker, 1996; Chong et al., 2007; Milani, 1975)
- 4) Use of information technology (6 questions) (based on Xiaeo et al., 2011)

We measured them in 5 Likert scale. 1 = strongly disagree to 5 = strongly agree

In general terms:

Organizational structure: 1 being centralized/mechanistic to 5 being decentralized/organic.

Organizational culture: 1 being adversarial/entrenched to 5 being Cohesive/flexible.

Budgetary participation: 1 being authoritative to 5 being participative.

Information technology: 1 being limited reliance on IT to 5 being heavy reliance on IT.

3.3 Pretest, Survey and Questionnaire

This study has employed structured questionnaire to gather primary data. We had to submit our initial questionnaire along with necessary documents to the University Ethics Committee. Our questionnaire got approval after one review with minor adjustments. We hired Qualtrics to conduct our survey. Qualtrics is a full-featured, web-based tool for creating and conducting online surveys. This tool is both easy to use and extremely powerful. The usual service payment is based on number of individual participants and complexity of the questionnaire. The length of the online survey was maximum of 10 minutes per respondents. After uploading the questionnaire in Qualtrics Survey System we ran a pilot test to check the credibility of the questionnaire. In the pilot test, we managed to ask 30 respondents. After satisfactory results we carried on the first study where we surveyed 125 respondents. In the second study we surveyed an additional 320 managers. Responses are mostly measured under 5 Likert scale, which range from: 1 = totally disagree to 5 = totally agree. The questionnaire for this research is developed based on measures provided in previously mentioned studies; however, the current questionnaire is significantly different from previous measurements, as it is/because –a) simpler with less wordy sentences makes it easier to understand due to careful editing, b) more coherent as the questions were posited based on three phases of strategic process, c) numbers of questions were shortened which made the questionnaire more concise and less complicated – both aids to respondents understanding of the study, and d) based on consistent theoretical relevance we have included measures for budgetary participation and use of information technology to further detail the influence of internal controls. A copy of the questionnaire is attached in the Appendix 2.

3.4 Sample data and Respondents

In the literature review, it was mentioned that the measures developed in Jagoda et al. (2016) and Kiridena et al. (2015) were developed within the context of Canadian manufacturing industry. Therefore, its more pertinent to conduct the research in the within manufacturing industry. The sample of the questionnaire represent a wide cross-section of firms in the USA manufacturing industry which ensured theoretical and literal replication as well as cross-(sub) sector comparisons of the findings. To examine functional-level strategies and its processes, the unit of analysis was taken as ‘organizational processes’ relating to strategic operations decisions and actions (rather

than the behavioral processes' that have been widely adopted within the domain of strategic decision-making (Cyert, Simon, and Trow 1956; Hickson 1986; Schwenk 1995), Dean and Sharfman 1996; Terpend, Krause, and Dooley 2011). This research is targeted to an audience of Operations/Manufacturing/Functional level Managers and other senior executives of comparable or higher ranks. Respondents' Criteria: a) Participants must be Operations / Manufacturing / Functional level Managers/other senior executives of comparable or higher ranks from manufacturing industry, and b) Participants must have good understanding of English language. Compiling both studies, we received 445 completed surveys from 445 managers or comparable post from the USA manufacturing sector. In the following I will briefly discuss the major points of USA manufacturing sector and propose why this research is applicable and useful for the industry.

4 Data analysis

Data collection

The survey was conducted in two different period: 1) March 2020 (W20) and 2) April 2021 (W21). Details of these studies are in the following table:

	W20	W21
Number of respondents	125	320
Missing data	0	0
Data collection period	April 2020	March 2021
Data collected by	Qualtrics	Qualtrics
No of questions	Screening questions: 4 Strategy initiation: 9 Strategy progression: 5 Strategy realization: 5 Organizational structure: 7 Use of IT: 6 Organizational culture: 8 Budgetary participation: 7 Performance priorities: 13 General information: 8	Screening questions: 4 Strategy initiation: 9 Strategy progression:5 Strategy realization: 5 Organizational structure: 7 Use of IT: 6 Organizational culture: 8 Budgetary participation: 7 Performance priorities: 13 General information: 8

		Production type: 1 NAICS code: 1
Industry type	Manufacturing	Manufacturing
Production types	Mixed	Project based, small/large batch, assembly line, continuous process
Industry region	United states of America	United states of America
Statistical software	IBM SPSS statistics 26	IBM statistics 26
Analyses used	Research question 1: Exploratory factor analysis (EFA), process macro model 4 Research question 2: process macro model 6	Research question 1: Exploratory factor analysis (EFA), process macro model 4 Research question 2: process macro model 6 Research question 3: process macro model 87

Table 3 Information on data collection

The W20 study was carried out with 125 respondents from USA manufacturing sector. Results were satisfactory which encouraged us to survey larger pool of managers from USA manufacturing industry. We carried out the second study – W21 in March 2021 with the intention to replicate patterns of earlier statistical results. In W21 study we surveyed 325 managers. For the simplicity of the presentation and generalizability we will only show data analysis based on W21’s results. Results of the W20 study is attached in Appendix 4, descriptive statistics are provided in Appendix 3. We also calculated the average responses (per construct) for both of the studies to check the similarity/difference between two datasets. Calculations are provided in Appendix 7. After calculating the averages, we then calculated the difference and then convert it into percentage form – out of 5 being the base. Out of 47 questions only 2 items have zero percentage change in terms

of responses. Overall, there is a significant difference between responses between two datasets, and they are not of same sample.

4.1 Research question one (W21)

We first conducted an exploratory factor analysis (EFA) to establish the presence of multiple forms of strategic process. We used EFA to identify the underlying factors. As we do not have any specific hypotheses about the nature of the underlying factor structures therefore EFA is more suitable for our data compared to confirmatory factor analysis (CFA). Also, EFA is often considered to be more appropriate than CFA in the early stages of scale development because the use of CFA is not imminent, until we want to check significance between all the factors. Lastly, EFA is more suitable for latent variables; and CFA is generally used to verify the factor structure of a set of observed variables. The basic Limitations of EFA is that no concrete causal inferences can be made from correlations alone. Therefore, we ran mediations to identify causal relationships between initiation, progression, and realization stages of functional level strategic process. For cross loadings, solution is to try different rotation methods to eliminate any cross-loadings and thus define a simpler structure. If the cross-loadings persist, it becomes a candidate for deletion. Another approach is to examine each variable's communality to assess whether the variables meet acceptable levels of explanation. Acceptable level is anything above 0.4, and ideal loading is around 0.7 or higher. We removed the items which are found to have more than one significant loading, therefore was mindful about cross-loading.

4.1.1 Exploratory factor analysis

Variance explained with the factors is 51.7 % which is satisfactory, especially given the intricate nature of the strategy formation process at the functional level (Torvich, 2021). We have conducted exploratory factor analysis to identify if there is more than one consistent pattern of functional level strategy process. We performed a Principal Component Analysis, Promax rotation with Kaiser normalization and absolute values less than 0.50 were suppressed. The results of the explanatory factor analysis, shown in Table 2, suggests that there are multiple forms of functional level strategy process. The pattern matrix in Table 2 also shows how each measure (questions) are clustered with other relevant measures and their respective loadings.

Pattern Matrix^a

	Factors		
	1	2	3
P1	.767		
R2	.680		
I9	.605		
P2	.599		
I3	.534		
R5		.893	
I8		.692	
P5		.626	
I4			.845
P3			.559
R1			.512

Extraction Method:
Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Table 4: Results of EFA

The results shown in Table 2 could be read as follows.

- Items start with I explains a specific setup of initiation stage, examples: I1 to I10 (10 items)
- Items start with P explains a specific setup of progression stage, examples: P1 to P4 (6 items)
- Items start with R explains a specific setup of realization stage, examples: R1 to R5 (6 items)

Processes excerpted from factor 1:

1. Process 8: I3 > P1 > R2
2. Process 9: I3 > P2 > R2
3. Process 10: I9 > P1 > R2
4. Process 11: I9 > P2 > R2

Processes excerpted from factor 2:

5. Process 12: I8 > P5 > R5

Processes excerpted from factor 3:

6. Process 13: I4 > P3 > R1

Based on explanatory factor analysis we establish the possibility of more than one functional level strategy process. The sample data shows that there are multiple forms of functional level strategy process, with each of them having at least one item representing initiation, progression and realization stages. Therefore, we reject the null hypothesis, and suggest that more than one form of functional level strategy process exist in practice, and each of the forms have at least one of each initiation, progression, and realization items. In Appendix 5, we provided internal reliability values (Cronbach's alpha) and in Appendix 8, you can find the correlation table. From the reliability table we can see that except factor 3 all the other measures have alpha more than 0.68 which is satisfactory and suggest that measures are credible to identify existing constructs. From the correlation table we can see that although constructs are all significantly correlated, which demonstrate existing linear relationship between variables. However, they are not highly correlated, hence decrease the risk of difficulty in model estimation, because the stronger the correlation, the more difficult it is to change one variable without changing another.

4.2 Research question two (W21)

Next, we conducted mediation analyses to confirm if any or all of these seven processes follow the sequence of initiation, progression and realization in such a manner that there will be a significant indirect effect of initiation stage on realization stage through progression stage, and that progression stage fully (or partially) improve (enhance) the relationship between initiation stage and realization stage.

4.2.1 Mediation analysis

We used SPSS Process Macro Model 4 to identify the mediation between strategy initiation, progression and realization. Mediation analyses were performed to assess the mediating role of progression stage on the linkage between initiation stage and realization stage of functional level strategic process. For an example, result of 'H1b – 3' revealed that total effect of I5 on R5 was

insignificant ($\beta = .06, t = .84, p = .40$). The positive effect of I5 on P5 was significant ($\beta = .26, t = 2.82, p = .01$) and finally P5 had a positive effect on R5 was also significant ($\beta = .47, t = 7.25, p = .00$). most importantly, the indirect effect of I5 on R5 through P5 is indirect effect = 0.12 ($p < 0.00$, bootstrap 95% CI: 0.03, 0.23).

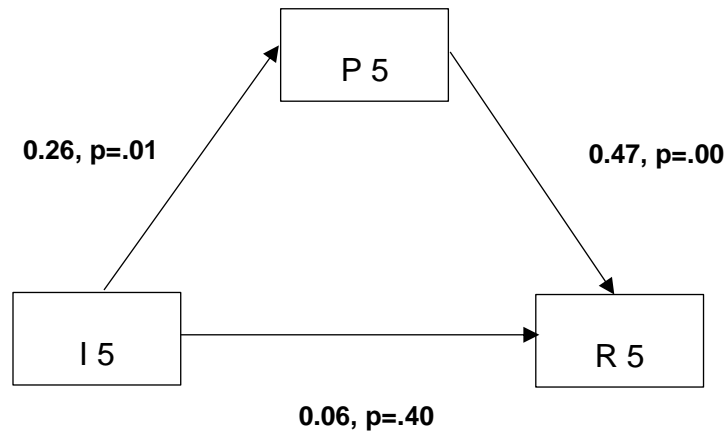


Figure 6: Results of indirect effects from mediation

Results of indirect effects from mediation analyses is provided in the following tables.

Hypothesis	Process	Indirect effect	BootSE	BootLLCI	BootULCI
H1b – 8	I3 > P1 > R2	.17	.05	.09	.28
H1b – 9	I3 > P2 > R2	.08	.03	.03	.14
H1b – 10	I9 > P1 > R2	.16	.04	.08	.25
H1b – 11	I9 > P2 > R2	.07	.03	.02	.13
H1b – 12	I8 > P5 > R5	.10	.03	.05	.15
H1b – 13	I4 > P3 > R1	.01	.02	-.02	.04

Table 5: Mediation results of W21

From the above mediation results we could see that except the respective processes of H1b -2, H1b -4, H1b -5 and H1b -13, all other processes show significant results. These give us enough statistical evidence to reject the null (H1b) and based on this thesis’s results we could suggest

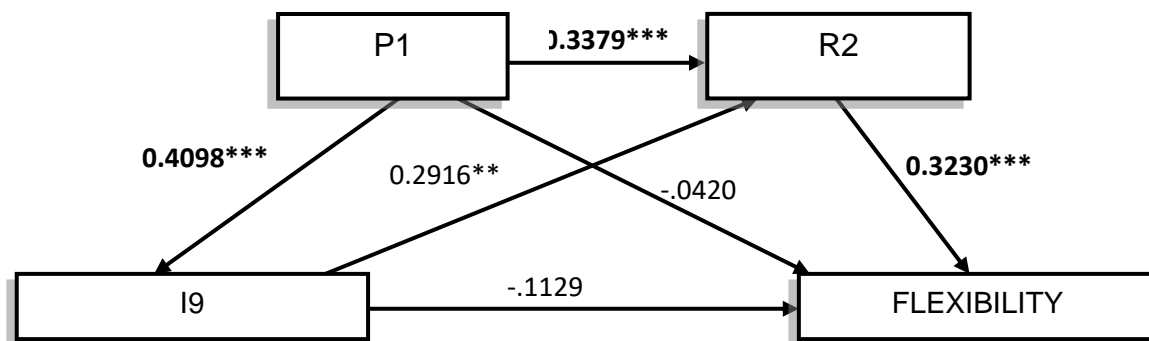
that during functional level strategic process, there are multiple processes where there will be a significant indirect effect of initiation stage on realization stage through progression stage, such that progression stage will fully (or partially) improve (enhance) the relationship between initiation stage and realization stage of functional level strategic process.

4.3 Research question three (W21)

We used SPSS Process Macro Model 6 to identify the serial mediation between strategy initiation, progression, realization, and performance priorities. The goal of these analysis is to examine the mediating roles of progression and realization stages between the proposed pathway between initiation stage and performance priorities.

4.3.1 Serial mediation analysis

Mediation analyses were performed to assess the mediating role of progression stage on the linkage between initiation stage and realization stage of functional level strategic process. For an example, a bootstrap analysis with 5,000 samples (Preacher and Hayes, 2008) was carried out to test the indirect effect of I9 on FLEXIBILITY through mediation of P1 and R2 (Hypothesis H2 –H27). The serial mediation model using both P1 and R2 were significant (indirect effect = -0.0447, SE = 0.0241, 95% CI = 0.0085 to 0.1027) and details are given in the diagram below.



*p < 0.05, **p < 0.01, *** p < 0.001

Figure 7: Example of serial mediation model of strategic process and operational performance

This shows that during functional level strategic process, there will be a significant indirect effect of initiation stage on performance priority through causally linked multiple mediators of progression stage and realization stage, such that multiple mediators of progression stage and realization stage will fully (or partially) improve (enhance) the relationship between initiation stage and performance priority. Results of all serial mediations are provided in the following table.

Hypothesis	Process	Indirect effect	BootSE	BootLLCI	BootULCI
H2 – 29	I3 > P1 > R2 > QUALITY	.02	.01	.01	.04
H2 – 30	I3 > P1 > R2 > COST	.04	.01	.02	.06
H2 – 31	I3 > P1 > R2 > FLEXIBILITY	.04	.01	.02	.06
H2 – 32	I3 > P1 > R2 > DELIVERY	.02	.01	.01	.04
H2 - 33	I3 > P2 > R2 > QUALITY	.01	.00	.00	.02
H2 – 34	I3 > P2 > R2 > COST	.02	.01	.01	.03
H2 – 35	I3 > P2 > R2 > FLEXIBILITY	.01	.01	.00	.03
H2 – 36	I3 > P2 > R2 > DELIVERY	.02	.01	.00	.03
H2 – 37	I9 > P1 > R2 > QUALITY	.03	.01	.01	.06
H2 – 38	I9 > P1 > R2 > COST	.03	.01	.02	.06
H2 – 39	I9 > P1 > R2 > FLEXIBILITY	.03	.01	.01	.06
H2 – 40	I9 > P1 > R2 > DELIVERY	.03	.01	.01	.05
H2 – 41	I9 > P2 > R2 > QUALITY	.01	.00	.00	.02
H2 – 42	I9 > P2 > R2 > COST	.01	.01	.00	.03
H2 – 43	I9 > P2 > R2 > FLEXIBILITY	.01	.01	.00	.03
H2 – 44	I9 > P2 > R2 > DELIVERY	.01	.01	.00	.03
H2 – 45	I8 > P5 > R5 > QUALITY	.01	.00	.00	.01
H2 – 46	I8 > P5 > R5 > COST	.01	.00	.00	.02
H2 – 47	I8 > P5 > R5 > FLEXIBILITY	.01	.01	.00	.02
H2 – 48	I8 > P5 > R5 > DELIVERY	.65	.01	.00	.02

Table 6: Serial mediation results of W21

The serial mediation results reveal the positive effect of functional strategic process on performance priorities. Only three out of thirty-six processes have exhibited insignificant results. This supports the hypothesis (H3) that during functional level strategic process, there will be a significant indirect effect of initiation stage on performance priority through causally linked

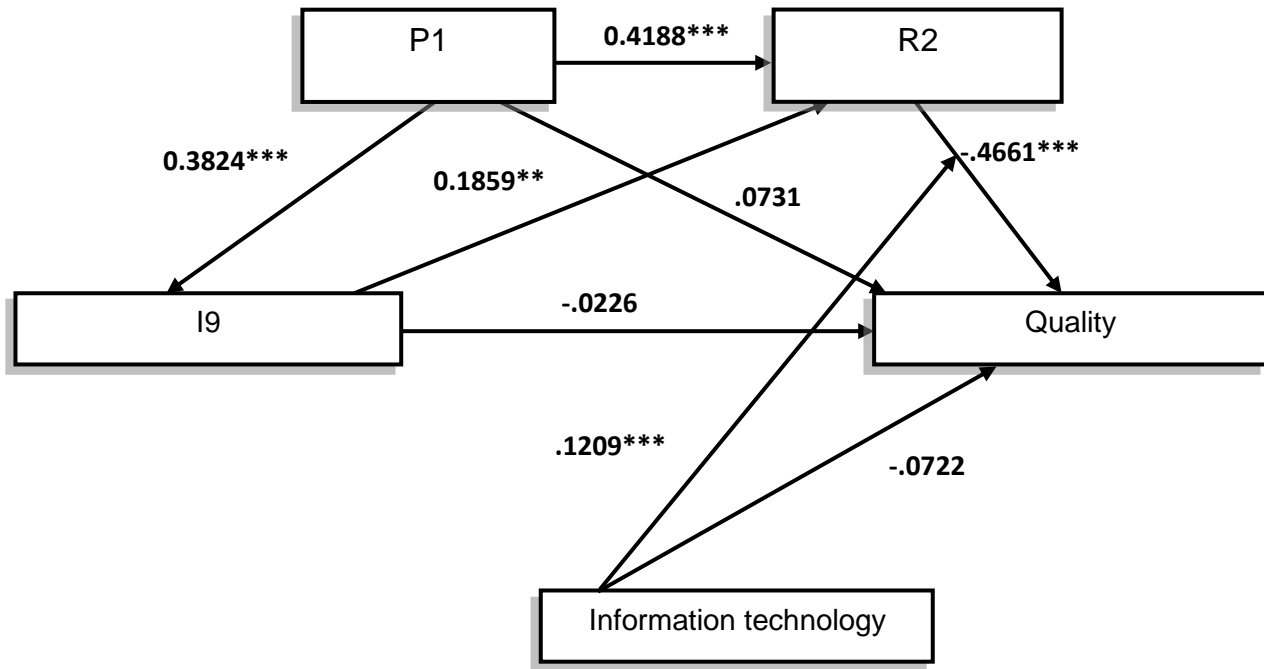
multiple mediators of progression stage and realization stage, such that multiple mediators of progression stage and realization stage will fully (or partially) improve (enhance) the relationship between initiation stage and performance priority.

4.4 Research question four

Here we examine the moderating role of contextual factors on the proposed pathway between functional level strategy process and performance priorities. These moderated sequential mediation models were computed using PROCESS Macro version 3 (Hayes, 2018a), model 87.

4.4.1 Moderated serial mediation results

The goal of these analyses was to examine the moderating role of management controls on the proposed pathway between functional level strategic process and performance priorities. These moderated sequential mediation models were computed using PROCESS Macro version 3 (Hayes, 2018a), model 87. For an example, during functional level strategic process, information technology will moderate the indirect effect of I9 on QUALITY through causally linked multiple mediators of P1 and R2, such that when employees are heavily reliant on information technology (higher) effects are more pronounced (positive) compared to when usage of information technology is limited (lower) (Hypothesis: H3c – 9). Statistical result of the analysis is given in the following diagram:



*p < 0.05, **p < 0.01, *** p < 0.001

Figure 8: Example of moderated serial moderation result of process, performance priorities and controls

Following statistical evidence show that at which point the conditional influence starts working.

Conditional effects of the focal predictor at values of the moderator(s):

AVGIT	Effect	se	t	p	LLCI	ULCI
3.43	-.05	.04	-1.33	.19	-.13	.02
4.14	.03	.04	.94	.35	-.04	.11
4.86	.12	.05	2.46	.01	.02	.22

To detail it further we have provided figure 4.4.2. From the figure we could see that if usage of information technology is low during realization stage, then quality of the product goes down. Although moderate use of information technology during realization stage has positive effect on the quality of product, but the proportional positive influence is much higher when the usage of information technology is high during that stage.

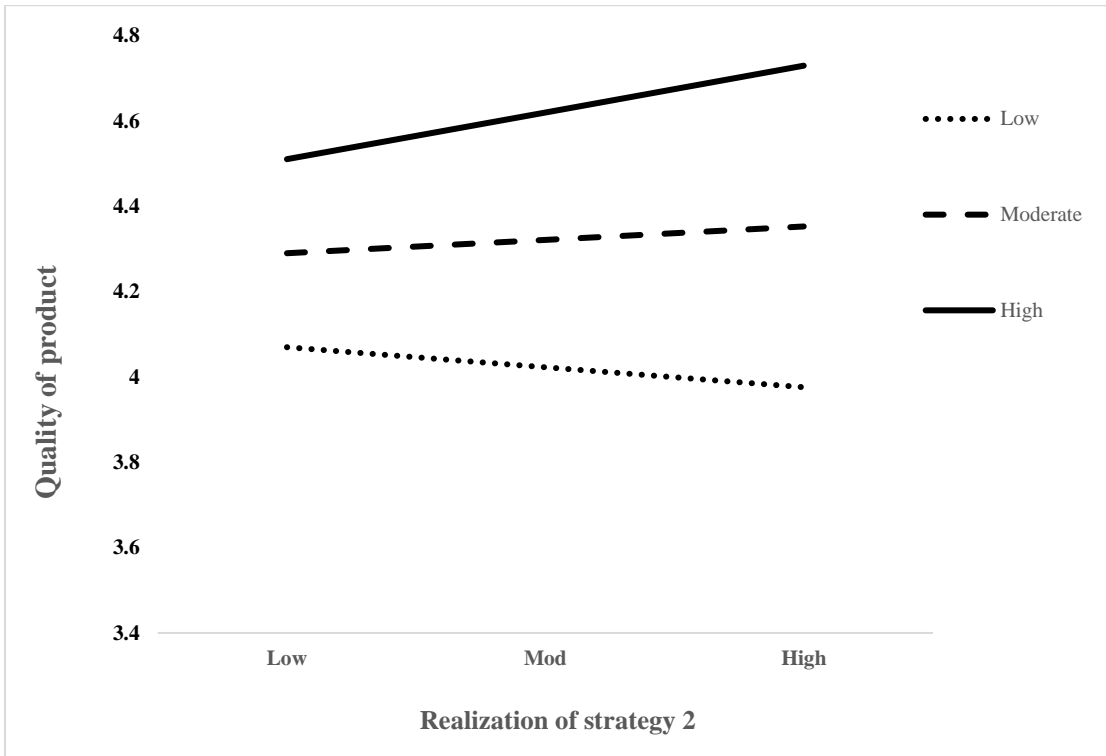


Figure 9: Conditional influence of information technology on process and performance priorities.

We have provided examples of moderated serial mediation results in Appendix 6 and following is the summary of results from moderated serial mediation analyses.

	Organizational structure			
	Quality	Cost	Flexibility	Delivery
I3 > P1 > R2				
I3 > P2 > R2				
I9 > P1 > R2				
I9 > P2 > R2				
I8 > P5 > R5				
	Organizational culture			
	Quality	Cost	Flexibility	Delivery
I3 > P1 > R2				
I3 > P2 > R2				
I9 > P1 > R2				
I9 > P2 > R2				
I8 > P5 > R5	Present	Present		Present
	Employee's participation in budget			
	Quality	Cost	Flexibility	Delivery
I3 > P1 > R2	PRESENT	PRESENT	PRESENT	
I3 > P2 > R2	PRESENT	PRESENT	PRESENT	
I9 > P1 > R2	PRESENT	PRESENT	PRESENT	
I9 > P2 > R2	PRESENT	PRESENT	PRESENT	PRESENT
I8 > P5 > R5		PRESENT		
	Use of information technology			
	Quality	Cost	Flexibility	Delivery
I3 > P1 > R2	PRESENT	PRESENT	PRESENT	PRESENT
I3 > P2 > R2	PRESENT	PRESENT		
I9 > P1 > R2	PRESENT	PRESENT		
I9 > P2 > R2	PRESENT	PRESENT		
I8 > P5 > R5				

Table 7: Conditional influence of management controls

From the above results we could see that it supports hypotheses 3b, 3c and 3d; but do not support hypothesis 3a. Based on our thesis results we could suggest that during functional level strategic process: 1) Organizational structure does not moderate the indirect effect of initiation stage on

performance priority through causally linked multiple mediators of progression stage and realization stage, such that when organizational structure is decentralized/organic (higher) effects are more pronounced (positive) compared to when structure is centralized/mechanistic (lower). 2) Organizational culture moderates the indirect effect of initiation stage on performance priority through causally linked multiple mediators of progression stage and realization stage, such that when organizational culture is cohesive/flexible (higher) effects are more pronounced (positive) compared to when culture is adversarial/entrenched (lower). 3) Extensive use of information technology moderates the indirect effect of initiation stage on performance priority through causally linked multiple mediators of progression stage and realization stage, such that when employees are heavily reliant on information technology (higher) effects are more pronounced (positive) compared to when usage of information technology is limited (lower). 4) Employee's budgetary participation moderates the indirect effect of initiation stage on performance priority through causally linked multiple mediators of progression stage and realization stage, such that when senior managements use participative budgeting (higher) effects are more pronounced (positive) compared to when the use authoritative budgeting (lower).

5 Discussion

Research contributions

Discussions on intersection of process and content are plenty, although the number of content-oriented studies are much more than process centric studies. This created asymmetry in quality of research, which made content related studies much richer in ideas and methods compare to process related studies. The modern scholarship of strategy gained its approbation during 1960s, when ‘planning’ was the central topic of strategy related dialogues. That was followed by pool of research emphasized on ‘policy’ related ideas during 1970s, and it’s not till mid 1980s when ‘process’ related studies gained popularity (Whittington, 1996). Whilst seminal authors such as Bower (1970), Mintzberg (1978) and Burgelman (1983b), who were among the founders of the strategy process tradition, suggested that strategy should be understood in inclusive frame of mind where process and content are not mutually exclusive. Still, after almost half a century, distinction between research on strategy content and strategic process is evidently mutually exclusive.

Furthermore, some of the primary constructs of strategy research are – content, controls, process, actors, decision making, social tools, direction of discourse, outcomes, and antecedents (Burgelman, 2018). Out of these, only two – process and decision making, directly address issues of strategic process, whereas all the other constructs contribute heavily to content-based scholarship. Therefore, to avoid being redundant and to utilize substantial body of strategy content research, we should carry out more integrative series of research. This paper is the continuation of series of studies (Kiridena et al., 2009; Jagoda et al., 2016) which were based on grounded theory. These earlier studies identified core constructs, alternative forms of process, key contextual factors, and provided detailed account of these constructs based on case study comparison analysis. As the next logical study, in this paper - we empirically examined those constructs based on structural equation modelling, detected the underlying relationships and provided a conceptual model which maps how these constructs along with contextual factors could fit within a strategic process framework. One of the major contributions of this study is to suggest (with substantial empirical evidence) a three-stage strategic process comprising of sequential phases of – initiation, progression, and realization. We need to be mindful about the fact that process is a platform (i.e. cellular phone) where contents exist (i.e. mobile phone applications). A three-stage process

framework allowed us to logically posit the identified measurements and establish causal relationships between them.

A second contribution of this study is to identify alternative forms of functional level strategic process, which abide the sequence of – initiation, progression and realization. Each of these stages has been addressed in detail in earlier studies (Kiridena et al., 2009), and could be categorized under forced, opportunistic or evolutionary situations/actions. Each process has a distinctive relationship with performance and contextual factors, which is likely to lead to different outcomes, values and ideas. This classification of alternatives forms of functional level strategic process is similar to the framework suggested by Floyd and Lane (2000). These authors argued that during strategic renewal subprocesses, operations level managers roles and communications could be classified as experimenting (i.e., evolutionary), adjusting (opportunistic) or conforming (forced). A clear understanding of key dimensions of functional level strategic processes can help managers prioritize their efforts and focus on those aspects that facilitate or hamper the progression of strategic initiatives. An understanding of how contextual factors influence functional level processes will help managers appreciate why certain forms of functional strategy development are more likely to occur or succeed in certain organizational settings and why some forms of functional level strategy development can be more effective in improving performance. Pettigrew (1992) urged to engage in studies which should not be limiting to decision making and change, rather and encompassing model that would in one hand include antecedents, and through action sequences in between how we could end up having desirable outcomes. We like to believe that through this paper we managed to do so by providing a serial mediation model where – initiation stage (i.e., antecedents) of functional level strategic process influence performance (i.e., outcome) through progression and realization stages of that process.

We contributed to the existing literature by proposing a moderated serial mediation model of process, performance, and context; and also provided statistical evidence of conditional influence of certain contextual factors (leadership style and market competition) during functional level strategic process. These two contextual factors address key constructs of strategic scholarship, that are – actors and power. Furthermore, in a seminal study author (Williamson, 1991) warned not to show reluctance by over simplifying bureaucracy/structure, however, we could not find any conditional influence of organizational structure and organizational culture. This could be

explained by rigid and sensitive nature of oil and gas industry which is long been institutionalized in the mound of quality and control, so, respondents might not find the importance of it at functional level, as it is already institutionalized.

Throughout this study we mentioned about strategic interactions/dialogues and strategic ploys with utmost significance and how they are crucial in every stage of functional level strategic process. Therefore, it is reasonable to shed some light on how we could achieve these meaningful communications., and in my opinion sensemaking is the key. Managers use sensemaking to interpret key events to others and also to themselves which significantly influence organizational decisions and strategic outcomes (Gioia and Thomas, 1996; Thomas et al., 1993). Sensemaking is an ongoing process through which managers attempt to identify (by interacting with others) reasonable tendencies from the events, which are triggered by events that are somehow ambiguous, startling, or confusing, (Maitlis, 2005; Weick, 1979, 1995). These ambiguities (i.e. antecedents) are caused by mostly unintentional shifts in the environments (Daft & Weick, 1984; Milliken, 1990). Weick (1995) argues that sensemaking is often comprised of two different processes: arguing and expecting. In ‘arguing’ individuals reason their way from one idea to the choice of another idea and in this way create a reasoned discourse. Whereas, ‘expecting’ process of sensemaking involves understanding how both managers and stakeholders read, use and make sense of these discourses and reports. Hill and Levenhagen (1995) stated that to cope with these uncertainties, managers must develop a mental model of how the environment works, and what needs to be done and then be able to communicate to others to gain mutual consent.

This ability of sense dissemination to shape the way others make comprehend is known as sensegiving (Whittle et al., 2015). Sensegiving is crucial to organizational leaders, as it (sensegiving) assists leaders to strategically shape the sensemaking of followers through the use of symbols, images, and other persuasive behaviors (Maitlis & Lawrence, 2007; Rouleau, 2005). Sensegiving is the process which individuals use to influence how others construct meaning. Sensegivers (e.g. leaders) try to shape the thinking and attitudes of others by giving meaning to specific events or changes. (Balogun & Johnson, 2004; Maitlis & Lawrence, 2003; Rouleau, 2005; Smith et al., 2010). Individuals execute the sensegiving to other organizational members through the use of symbols, images, and other persuasive techniques (Gioia & Chittipeddi, 1991; Maitlis & Lawrence, 2007; Rouleau, 2005). Despite using various terminologies, most authors agreed that

sensegiving (to others) is key element of leader's sensemaking process; and it (sensemaking) will remain incomplete unless proper sense is distributed to followers for gaining a collective consent (Whittle, 2015; Werkman, 2010). In summary, I would like to believe that this study will contribute to both academic and industry in following manners:

Modes of theorizing: This study offers a deductive approach to the past studies and makes it more generalizable. We provided a management tool that would direct you to appropriate functional paths and prescribed plan of progression according to prioritized performances/objectives. This research also contributes to strategy scholarship by attempting to unlock the black box of simpler mechanism at functional level which is crucial for firm's agility and performance. We offered a conceptual model which detailed functional level strategic process from a dynamic perspective (compare to static approach used by previous authors) by showing movements of each stage of process, how the process works in a sequence and how dynamics between processes and performances change when we include controls in the discussion.

A) Levels of analysis: By examining how institutionalism could address strategic movements at functional levels of organization we integrated classic theory and current context. Rather than being redundant we tried to provide a simple provisional functional framework which would keep you alert and help you to make correct decisions. We also analyzed micro aspects of strategic situations compare to more populated macro studies. As we liked to believe simpler mechanisms are not open to complexities, therefore, at functional level proper drilling of all strategic patterns and simple functional mechanism will only make firm alert and agile.

B) Causal mechanisms: In this study we exhibited mediation between three stages of functional level strategic process, serial mediation between process and performance priority and finally moderated serial between controls, process and performance. This synthesized mechanisms during functional level strategic process by drawing a complete picture of how process mediates performance priorities and during this process they are moderated by certain controls. All past studies on this subject matter mostly relied on qualitative studies and few efforts for simple empirical evidence. However, we provided an in depth and enriched empirical evidence based on advanced mediation and moderation analysis.

C) Measures: With reasonable literature we clarified distinctions between functional strategy and operations strategy. We also provided measures for senior managers to identify various forms of strategic constructs which they could further dissect for specific decision making. We also contributed

management accounting literature by examining performance measures and management controls within the context of functional level strategic process.

Managerial implications

Based on sample data it could be suggested that the prioritization on quality aspects of product(s) are usually triggered by competitors' movements, then it is progress along formal paths supervised by functional level managers and eventually objectives are accomplished by building consensus among employees. Cost related prioritization are usually triggered by experimentation, which then progress along informal paths at the discretion of functional level managers, and the plans are eventually implemented through trial and error/cause and effect approach. Again, for lack of contextual factors made it difficult to address this process's effect in detail. The sample data indicates us that when it comes to flexibility and delivery aspects of strategic prioritization it is usually instigated by top level managers, by setting up formal paths and specific goals for functional level employees, and eventually strategic objectives are executed by following rules and requirements provided by top level managers. Top management's initiatives and them providing proper implementation guideline is better for achieving Quality, Cost and Delivery related priorities during functional level strategic processes. Seeking for opportunity under the guidance top managements guidelines is better for achieving Flexibility related priorities during functional level strategic processes. Following formal rules set by top management is most favorable way of strategic implementation. It is more likely to achieve performance priorities and strategic implementation when progression is supervised by functional level managers As predicted earlier organizational structure is unlikely to conditionally influence the relationship and statistics show that structure does not moderate any combinations of functional level strategic process and performance priorities. Finally, Use of information and communication technology IT and employee's involvement in budget conditionally influence Process 1, however, coefficients are lower compared to other processes. Further implications are provided in Appendix 6.

6 Conclusion

Functional level strategy is the tenet where parallel alternative types of strategic processes are usually formed by either: 1) targets/objectives/ priorities, passed down to functional level by upper managements, 2) opportunities resulted from managers' shared disposition (across all levels) or key externalities and 3) purposeful growth and learning ideas. In the progression stage, relevant employees collectively attempt to find answers /solutions /reasonings to deal with the issue which triggered that process. Managers have three options to deal with the second stage (i.e., progression), however the selection is significantly influenced by how it was initiated. These three options for progressing are: controlled / supervised / accorded. These three options are comparative, and the intensity of the comparisons change according to resources available and competitors' movements. In the last stage of functional level strategic process, managers attempt to successfully execute 'the plan' in three distinctive approaches, they are: 1) by compliance, 2) through interaction or 3) through experimentation. Based on current understanding we are suggesting following requirements that should be addressed at the functional level while preparing for the new normal: a) Managements should include disruptions in their projections/analyses; therefore, plans should be specific and shorter, rather than part of long-term intentions, b) Increase the visibility of functions and operations to keep employees and stakeholders informed and aware, c) Build regional manufacturing base, although costlier but will keep company rolling during disruptions, d) Develop business models which are effective hybrids of production and non-production movements, e) Increase digital capabilities in functional and operational environments, f) Maintain some level of partnership with medical equipment manufacturers, and g) Eventual move towards developing and maintaining smart factory.

We try to remain detailed, reasonable, coherent, and thorough while conducting this study, there are still limitations of this study. Although, we showed how functional level strategic process influence performance priorities, however we have not provided thorough details for each of the stages of the process. To stay true to the focus of the study, which is implementation of strategy, we choose to emphasize on the final stage of functional level strategic process and did not provide details on how the initiation stage and progression stage of strategic process influence performance priorities. Though, we must confess that both of those stages influence performance priorities, and sort of groom up the whole plan to finally get executed at realization stage. We have not provided

enough details on how selective management controls: use of information technology, employee's participation in budget and organizational culture conditionally influences our studied relationship of process and performance priorities. In my opinion, a separate study should be carried on how these controls moderates the scenario as a package. As mentioned earlier, the natural progression of this study is to identify the relevant financial ticks, which we have not. Extending the analysis in the realm of financial ratios/classifications will enhance the undertakings from this study. Although, we have tested the validity and their influence on performance priorities - of all theoretically driven functional level strategic processes involved in this study. But there are numerous other processes beyond the factor analysis clusters which should be analyzed.

Futures dialogue regarding this subject matter should involve: Inclusion of financials: although, we discussed how strategic process influence performance priorities positively, but at functional level 'financial numbers' regarded as the language. It is imperative to include financial ratios/classes as dependent variable in this model to see how much we are saving and/or making. It will bring more objectivity to this study, and in result will enrich the strategic dialogues among managers and their subordinates. Management accounting tool: this study could be used by managers to examine retrospectively are employees in the same boat during the strategic process? It will help us to check the difference between priorities (what we should do) and coherence (how things are). Managers could extend this tool beyond their companies and could use this to have more understanding of the suppliers/vendors/external stakeholders. Use of algorithm: align with current business world, this study could be converted into a statistical tool or an application for phones to make it handy for managers/supervisors for both profit and non-profit companies. Although, driven by literature we tried to do a an extensive data analysis, however, there could be numerous combinations between functional level strategic process, performance priorities, financials, management controls, company types/nature, level of the organization – to name a few. In my opinion, if we could develop an algorithm based on this study and convert into an application, the practicality of this study will increase multifold. An app could easily and quickly provide you the current state of the company from many useful angles which we could not because of the constrained resource. This could also help us to come with plausible projections and forecasts to make managerial decision making more informed and hopefully profitable.

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Appendix 1 Testable Hypotheses

Study one – Winter 2020 semester – W20

For Research question 2:

H1b - 1. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on R4 through P2, such that P2 will fully (or partially) improve (enhance) the relationship between I8 and R4.

H1b - 2. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on R4 through P4, such that P4 will fully (or partially) improve (enhance) the relationship between I8 and R4.

H1b - 3. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on R5 through P5, such that P5 will fully (or partially) improve (enhance) the relationship between I5 and R5.

H1b - 4. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on R1 through P5, such that P5 will fully (or partially) improve (enhance) the relationship between I5 and R1.

H1b - 5. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on R3 through P5, such that P5 will fully (or partially) improve (enhance) the relationship between I5 and R3.

H1b - 6. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I1 on R2 through P1, such that P1 will fully (or partially) improve (enhance) the relationship between I1 and R2.

H1b - 7. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on R2 through P1, such that P1 will fully (or partially) improve (enhance) the relationship between I9 and R2.

For Research question 3:

H2 - 1. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on QUALITY through causally linked multiple mediators of P2 and R4, such that multiple mediators of P2 and R4 will fully (or partially) improve (enhance) the relationship between I8 and QUALITY.

H2 - 2. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on COST through causally linked multiple mediators of P2 and R4, such that multiple mediators of P2 and R4 will fully (or partially) improve (enhance) the relationship between I8 and COST.

H2 - 3. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on FLEXIBILITY through causally linked multiple mediators of P2 and R4, such that multiple mediators of P2 and R4 will fully (or partially) improve (enhance) the relationship between I8 and FLEXIBILITY.

H2 - 4. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on DELIVERY through causally linked multiple mediators of P2 and R4, such that multiple mediators of P2 and R4 will fully (or partially) improve (enhance) the relationship between I8 and DELIVERY.

H2 - 5. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on QUALITY through causally linked multiple mediators of P4 and R4, such that multiple mediators of P4 and R4 will fully (or partially) improve (enhance) the relationship between I8 and QUALITY.

H2 - 6. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on COST through causally linked multiple mediators of P4 and R4, such that multiple mediators of P4 and R4 will fully (or partially) improve (enhance) the relationship between I8 and COST.

H2 - 7. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on FLEXIBILITY through causally linked multiple mediators of P and R4, such that multiple mediators of P4 and R4 will fully (or partially) improve (enhance) the relationship between I8 and FLEXIBILITY.

H2 - 8. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on DELIVERY through causally linked multiple mediators of P4 and R4, such that multiple mediators of P4 and R4 will fully (or partially) improve (enhance) the relationship between I8 and DELIVERY.

H2 - 9. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on QUALITY through causally linked multiple mediators of P5 and R5, such that multiple mediators of P5 and R5 will fully (or partially) improve (enhance) the relationship between I5 and QUALITY.

H2 - 10. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on COST through causally linked multiple mediators of P5 and R5, such that multiple mediators of P5 and R5 will fully (or partially) improve (enhance) the relationship between I5 and COST.

H2 - 11. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on FLEXIBILITY through causally linked multiple mediators of P5 and R5, such that multiple mediators of P5 and R5 will fully (or partially) improve (enhance) the relationship between I5 and FLEXIBILITY.

H2 - 12. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on DELIVERY through causally linked multiple mediators of P5 and R5, such that multiple mediators of P5 and R5 will fully (or partially) improve (enhance) the relationship between I5 and DELIVERY.

H2 - 13. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on QUALITY through causally linked multiple mediators of P5 and R1, such that multiple mediators of P5 and R1 will fully (or partially) improve (enhance) the relationship between I5 and QUALITY.

H2 - 14. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on COST through causally linked multiple mediators of P5 and R1, such that multiple mediators of P5 and R1 will fully (or partially) improve (enhance) the relationship between I5 and COST.

H2 - 15. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on FLEXIBILITY through causally linked multiple mediators of P5 and R1, such that multiple mediators of P5 and R1 will fully (or partially) improve (enhance) the relationship between I5 and FLEXIBILITY.

H2 - 16. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on DELIVERY through causally linked multiple mediators of P5 and R1, such that multiple mediators of P5 and R1 will fully (or partially) improve (enhance) the relationship between I5 and DELIVERY.

H2 - 17. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on QUALITY through causally linked multiple mediators of P5 and R3, such that multiple mediators of P5 and R3 will fully (or partially) improve (enhance) the relationship between I5 and QUALITY.

H2 - 18. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on COST through causally linked multiple mediators of P5 and

R3, such that multiple mediators of P5 and R3 will fully (or partially) improve (enhance) the relationship between I5 and COST.

H2 - 19. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on FLEXIBILITY through causally linked multiple mediators of P5 and R3, such that multiple mediators of P5 and R3 will fully (or partially) improve (enhance) the relationship between I5 and FLEXIBILITY.

H2 - 20. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I5 on DELIVERY through causally linked multiple mediators of P5 and R3, such that multiple mediators of P5 and R3 will fully (or partially) improve (enhance) the relationship between I5 and DELIVERY.

H2 - 21. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I1 on QUALITY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I1 and QUALITY.

H2 - 22. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I1 on COST through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I1 and COST.

H2 - 23. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I1 on FLEXIBILITY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I1 and FLEXIBILITY.

H2 - 24. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I1 on DELIVERY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I1 and DELIVERY.

H2 - 25. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on QUALITY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I9 and QUALITY.

H2 - 26. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on COST through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I9 and COST.

H2 - 27. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on FLEXIBILITY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I9 and FLEXIBILITY.

H2 - 28. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on DELIVERY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I9 and DELIVERY.

Study two – Winter 2021 semester – W21

For Research question 2:

H1b - 8. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I3 on R2 through P1, such that P1 will fully (or partially) improve (enhance) the relationship between I3 and R2.

H1b - 9. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I3 on R2 through P2, such that P2 will fully (or partially) improve (enhance) the relationship between I3 and R2.

H1b - 10. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on R2 through P1, such that P1 will fully (or partially) improve (enhance) the relationship between I9 and R2.

H1b -11. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on R2 through P2, such that P2 will fully (or partially) improve (enhance) the relationship between I9 and R2.

H1b - 12. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on R5 through P5, such that P5 will fully (or partially) improve (enhance) the relationship between I8 and R5.

H1b - 13. (mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I4 on R1 through P3, such that P3 will fully (or partially) improve (enhance) the relationship between I4 and R1.

For Research Question 3:

H2 - 29. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I3 on QUALITY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I3 and QUALITY.

H2 - 30. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I3 on COST through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I3 and COST.

H2 - 31. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I3 on FLEXIBILITY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I3 and FLEXIBILITY.

H2 - 32. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I3 on DELIVERY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I3 and DELIVERY.

H2 - 33. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I3 on QUALITY through causally linked multiple mediators of P2 and R2, such that multiple mediators of P2 and R2 will fully (or partially) improve (enhance) the relationship between I3 and QUALITY.

H2 - 34. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I3 on COST through causally linked multiple mediators of P2 and R2, such that multiple mediators of P2 and R2 will fully (or partially) improve (enhance) the relationship between I3 and COST.

H2 - 35. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I3 on FLEXIBILITY through causally linked multiple mediators of P2 and R2, such that multiple mediators of P2 and R2 will fully (or partially) improve (enhance) the relationship between I3 and FLEXIBILITY.

H2 - 36. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I3 on DELIVERY through causally linked multiple mediators of P2 and R2, such that multiple mediators of P2 and R2 will fully (or partially) improve (enhance) the relationship between I3 and DELIVERY.

H2 - 37. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on QUALITY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I9 and QUALITY.

H2 - 38. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on COST through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I9 and COST.

H2 - 39. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on FLEXIBILITY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I9 and FLEXIBILITY.

H2 - 40. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on DELIVERY through causally linked multiple mediators of P1 and R2, such that multiple mediators of P1 and R2 will fully (or partially) improve (enhance) the relationship between I9 and DELIVERY.

H2 - 41. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on QUALITY through causally linked multiple mediators of P2 and R2, such that multiple mediators of P2 and R2 will fully (or partially) improve (enhance) the relationship between I9 and QUALITY.

H2 - 42. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on COST through causally linked multiple mediators of P2 and R2, such that multiple mediators of P2 and R2 will fully (or partially) improve (enhance) the relationship between I9 and COST.

H2 - 43. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on FLEXIBILITY through causally linked multiple mediators of P2 and R2, such that multiple mediators of P2 and R2 will fully (or partially) improve (enhance) the relationship between I9 and FLEXIBILITY.

H2 - 44. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I9 on DELIVERY through causally linked multiple mediators of P2 and R2, such that multiple mediators of P2 and R2 will fully (or partially) improve (enhance) the relationship between I9 and DELIVERY.

H2 - 45. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on QUALITY through causally linked multiple mediators of P5 and R5, such that multiple mediators of P5 and R5 will fully (or partially) improve (enhance) the relationship between I8 and QUALITY.

H2 - 46. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on COST through causally linked multiple mediators of P5 and R5, such that multiple mediators of P5 and R5 will fully (or partially) improve (enhance) the relationship between I8 and COST.

H2 - 47. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on FLEXIBILITY through causally linked multiple mediators of P5 and R5, such that multiple mediators of P5 and R5 will fully (or partially) improve (enhance) the relationship between I8 and FLEXIBILITY.

H2 - 48. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I8 on DELIVERY through causally linked multiple mediators of P5 and R5, such that multiple mediators of P5 and R5 will fully (or partially) improve (enhance) the relationship between I8 and DELIVERY.

H2 - 49. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I4 on QUALITY through causally linked multiple mediators of P3 and R1, such that multiple mediators of P3 and R1 will fully (or partially) improve (enhance) the relationship between I4 and QUALITY.

H2 - 50. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I4 on COST through causally linked multiple mediators of P3 and R1, such that multiple mediators of P3 and R1 will fully (or partially) improve (enhance) the relationship between I4 and COST.

H2 - 51. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I4 on FLEXIBILITY through causally linked multiple mediators of P3 and R1, such that multiple mediators of P3 and R1 will fully (or partially) improve (enhance) the relationship between I4 and FLEXIBILITY.

H2 - 52. (serial mediation hypothesis): during functional level strategic process, there will be a significant indirect effect of I4 on DELIVERY through causally linked multiple mediators of P3 and R1, such that multiple mediators of P3 and R1 will fully (or partially) improve (enhance) the relationship between I4 and DELIVERY.

For Research Question 4:

H3a - 1. (moderated serial mediation hypothesis): during functional level strategic process, organizational structure will moderate the indirect effect of I3 on QUALITY through causally linked multiple mediators of P1 and R2, such that when organizational structure is decentralized/organic (higher) effects are more pronounced (positive) compared to when structure is centralized/mechanistic (lower).

H3a - 2. (moderated serial mediation hypothesis): during functional level strategic process, organizational structure will moderate the indirect effect of I3 on COST through causally linked multiple mediators of P1 and R2, such that when organizational structure is decentralized/organic (higher) effects are more pronounced (positive) compared to when structure is centralized/mechanistic (lower).

H3a - 3. (moderated serial mediation hypothesis): during functional level strategic process, organizational structure will moderate the indirect effect of I3 on FLEXIBILITY through causally linked multiple mediators of P1 and R2, such that when organizational structure is decentralized/organic (higher) effects are more pronounced (positive) compared to when structure is centralized/mechanistic (lower).

H3a - 4. (moderated serial mediation hypothesis): during functional level strategic process, organizational structure will moderate the indirect effect of I3 on DELIVERY through causally linked multiple mediators of P1 and R2, such that when organizational structure is decentralized/organic (higher) effects are more pronounced (positive) compared to when structure is centralized/mechanistic (lower).

H3a - 5. (moderated serial mediation hypothesis): during functional level strategic process, organizational structure will moderate the indirect effect of I3 on QUALITY through causally linked multiple mediators of P2 and R2, such that when organizational structure is decentralized/organic (higher) effects are more pronounced (positive) compared to when structure is centralized/mechanistic (lower).

H3a - 6. (moderated serial mediation hypothesis): during functional level strategic process, organizational structure will moderate the indirect effect of I3 on COST through causally linked multiple mediators of P2 and R2, such that when organizational structure is decentralized/organic (higher) effects are more pronounced (positive) compared to when structure is centralized/mechanistic (lower).

H3a - 7. (moderated serial mediation hypothesis): during functional level strategic process, organizational structure will moderate the indirect effect of I3 on FLEXIBILITY through causally linked multiple mediators of P2 and R2, such that when organizational structure is decentralized/organic (higher) effects are more pronounced (positive) compared to when structure is centralized/mechanistic (lower).

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H3c - 2. (moderated serial mediation hypothesis): during functional level strategic process, information technology will moderate the indirect effect of I3 on COST through causally linked multiple mediators of P1 and R2, such that when employees are heavily reliant on information technology (higher) effects are more pronounced (positive) compared to when usage of information technology is limited (lower).

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H3d - 1. (moderated serial mediation hypothesis): during functional level strategic process, budgetary participation will moderate the indirect effect of I3 on QUALITY priority through causally linked multiple mediators of P1 and R2, such that when senior managements use participative budgeting (higher) effects are more pronounced (positive) compared to when the use authoritative budgeting (lower).

H3d - 2. (moderated serial mediation hypothesis): during functional level strategic process, budgetary participation will moderate the indirect effect of I3 on COST priority through causally linked multiple mediators of P1 and R2, such that when senior managements use participative budgeting (higher) effects are more pronounced (positive) compared to when the use authoritative budgeting (lower).

H3d - 3. (moderated serial mediation hypothesis): during functional level strategic process, budgetary participation will moderate the indirect effect of I3 on FLEXIBILITY priority through causally linked multiple mediators of P1 and R2, such that when senior managements use participative budgeting (higher) effects are more pronounced (positive) compared to when the use authoritative budgeting (lower).

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H3d - 17. (moderated serial mediation hypothesis): during functional level strategic process, budgetary participation will moderate the indirect effect of I8 on QUALITY priority through causally linked multiple mediators of P5 and R5, such that when senior managements use participative budgeting (higher) effects are more pronounced (positive) compared to when the use authoritative budgeting (lower).

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Appendix 2 Questionnaire

Introduction

Study Name: Strategy, process and control: Empirical analysis of the integration of functional level strategic process and performance

Principal Investigator: Dr. Kalinga Jagoda, Associate Professor (Management), Lang College of Business and Economics

Graduate Investigator: Saad Hossain, PhD Candidate (Management), Lang College of Business and Economics

Respondents' Criteria:

1. Participants must be Operations/Manufacturing/Functional level Managers/other senior executives of comparable or higher ranks from manufacturing industry.
2. Participants must have good understanding of English language.

Length of Study: Maximum 10 minutes.

Foreseeable Risk: Minimal, as participants do not have to provide their name or company's name.

Remuneration: 8 USD

This survey is developed to examine the relationship between alternative forms of functional level strategic process, organizational factors and performance. This research is targeted to an audience of Operations/Manufacturing/Functional level Managers and other senior executives of comparable or higher ranks. There is no direct benefit to the participant.

The answers to the questions should reflect the position of your business or functional unit, which can be a standalone firm or a substantial division of the firm. Should you find any questions to be difficult, leave it unanswered and please proceed to the next question. Results of the study (in aggregate form) may be presented, discussed and published in appropriate academic forums and journals with the intention to contribute to the advancement of knowledge. In any publication, information will be provided in such a way that both you and your organization will remain anonymous. Please note that confidentiality cannot be guaranteed while data are in transit over internet. You do not waive any legal rights by agreeing to take part in this study. Prospective participants are under no obligation to participate.

This project has been reviewed by the Research Ethics Board for compliance with federal guidelines for research involving human participants. If you have questions regarding your rights and welfare as a research participant in this study (REB#19-08-008), please contact: Manager, Research Ethics; University of Guelph; reb@uoguelph.ca; (519) 824-4120 (ext. 56606). If you have any further queries, please feel free to contact Dr. Kalinga Jagoda (Phone: 6479726126; email: kjagoda@uoguelph.ca) or Saad Hossain (Phone: 5197317482; email: hossains@uoguelph.ca).

Section A

Strategy is the means (e.g. plans, patterns, positions, perspectives and ploys) by which an organization achieves its goals. Usually, strategic process involves three consecutive phases:

1. Initiation: strategies are usually triggered by certain event(s). [Part A]
2. Progression: based on these events we develop plan to achieve organizational goal(s). [Part B]
3. Realization: this is last phase of strategic process where we execute this plan by utilizing our abilities. [Part C]

Based on this understanding please answer the following questions:

Strategic planning related to your business/functional unit are usually **Initiated**:

Part A		Strongly disagree 1	Disagree 2	Not sure 3	Agree 4	Strongly agree 5
1	To comply with regulatory requirements					
2	To take advantage of technological breakthroughs					
3	To capitalize on emerging opportunities					
4	As a result of previous agreements or events					
5	In response to competitors' movements					
6	To solve/address ongoing strategic issues operational problems					
7	To meet growing demand in the market					
8	Based on experimentation/trial and error of ideas and solutions					
9	Based on top management's instructions					

Strategic decisions and actions within your business/functional unit are usually **Progressed**:

Part B		Strongly disagree 1	Disagree 2	Not sure 3	Agree 4	Strongly agree 5
10	Along formal paths to fulfill the goals set by top-level managers					
11	Along formal paths, under the supervision of functional-level managers					
12	Along informal paths, at the discretion of functional-level managers					
13	Along without any consultation from the subordinates					
14	Along informal paths, at the discretion of top-level managers					

Strategic goals in your business/functional unit are usually **Realized**:

	Part C	Strongly disagree 1	Disagree 2	Not sure 3	Agree 4	Strongly agree 5
15	through continuous interactions with stakeholders					
16	in adherence to formal rules set by top management					
17	in coordination with other functional and business units					
18	through consensus building among employees					
19	through cause and effect (i.e. reactive) approach					

Section B

Successful execution of strategy is influenced by certain factors in the organizational environment such as – organizational structure and culture, the extent of the use of information and communication technologies and employee’s involvement in the budget process. Based on this understanding, please answer the following questions:

Please indicate that in your business/functional unit:

	Organizational Structure	Strongly disagree 1	Disagree 2	Not sure 3	Agree 4	Strongly agree 5
20	Channels of communication are not bureaucratic					
21	Informal relationships are more prioritized than following formal rules					
22	There is a strong tendency to follow the formal job descriptions					
23	Employees have open access to the financial/operating performance data					
24	Channels of decision making is decentralized					
25	There is a strong emphasis on employee empowerment					

Please indicate that in your business/functional unit, the use of information and communication technology (ICT):

Use of information and communication technology (ICT)		Strongly disagree 1	Disagree 2	Not sure 3	Agree 4	Strongly agree 5
26	Is extensive for data collection and analysis					
27	Is extensive for supporting product costing					
28	Is extensive for supporting decision making					
29	Is extensive for supporting planning and control					
30	Is extensive for supporting business processes					

Please indicate that in your business/functional unit:

Employee involvement in Budget process		Strongly disagree 1	Disagree 2	Not sure 3	Agree 4	Strongly agree 5
31	Managers have decisive influence on their budget targets					
32	Budget targets are decided in a bottom-up approach					
33	Managers play a significant role in drafting the budget					
34	Budgeting process is subject to frequent scrutiny by managers at all levels					
35	Budget drafting involves extensive discussions between senior management and functional level managers					
36	Managers use budget information to review the actions of employees					

Please indicate that in your business/functional unit:

Organizational culture		Strongly disagree 1	Disagree 2	Not sure 3	Agree 4	Strongly agree 5
37	Being competitive is highly valued					
38	Expectation level for employee performance is very high					
39	Paying attention to detail is highly valued					
40	Being precise is highly valued					
41	Willingness to experiment is highly valued					
42	Being opportunistic is highly valued					

43	Being result-oriented is highly valued					
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Section C

Using the given scale below, please indicate your assessment of the operations/functional unit-level performance compared to major competitors:

Questions		Poor end of the industry 1	Below average 2	Average 3	Above average 4	Industry leader 5
Quality	Conformance to product/service specifications					
	Functional/aesthetic product/service performance					
	Functional reliability of product/service					
	Durability of the product/service					
Delivery	Lead time: from order entry to dispatch					
	On-time delivery: delivery on or before due date					
Cost	Unit cost					
	Labor productivity					
	Inventory turnover					
	Plant and capacity utilization					
Flexibility	Ability to respond to changes in order size at short notice					
	Ability to make design changes at short notice					

Section D

54. Please indicate your position in the company:
1. Top level manager
 2. Mid-level manager
 3. Functional level manager
55. Please indicate your business/functional unit (e.g. marketing, distribution, product development etc.):
56. Please identify the most appropriate ownership type of your business/functional unit:
1. Local
 2. Regional
 3. Provincial
 4. National
 5. Multinational
57. What is the maturity stage of your business/functional unit?
1. Growing
 2. Merging
 3. Established
 4. Pioneering
 5. Other (please specify):
58. Please indicate the number of years of your organization has been in the business:
59. What is the number of employees in your Organization?
1. 1 to 99 employees
 2. 100 to 500 employees
 3. More than 500 employees
60. What is the estimated annual revenue (in CAD\$) of your *Organization* in last year?
- a. Less than 5 Million
 - b. 5 Million to 10 Million
 - c. 11 Million - 50 Million
 - d. More than 50 Million
- Amount (CAD\$):
61. What is the estimated total asset (in CAD\$) of your *Organization* in last year?
- a. Less than 10 Million
 - b. 11 Million to 100 Million
 - c. 101 Million - 200 Million
 - d. More than 200 Million

Please indicate which of the following types of production is most applicable to your business.

- Project-based
- Job shop or small batch
- Large batch
- Assembly line
- Continuous process
- Other (please specify): _____

Please indicate which of the following NAICS codes applies to your business.

- 311 Food Manufacturing
- 312 Beverage and Tobacco Product Manufacturing
- 313 Textile Mills
- 314 Textile Product Mills
- 315 Apparel Manufacturing
- 316 Leather and Allied Product Manufacturing
- 321 Wood Product Manufacturing
- 322 Paper Manufacturing
- 323 Printing and Related Support Activities
- 324 Petroleum and Coal Products Manufacturing
- 325 Chemical Manufacturing
- 326 Plastics and Rubber Products Manufacturing
- 327 Nonmetallic Mineral Product Manufacturing
- 331 Primary Metal Manufacturing
- 332 Fabricated Metal Product Manufacturing
- 333 Machinery Manufacturing
- 334 Computer and Electronic Product Manufacturing
- 335 Electrical Equipment, Appliance, and Component Manufacturing
- 336 Transportation Equipment Manufacturing
- 337 Furniture and Related Product Manufacturing
- 339 Miscellaneous Manufacturing

Appendix 3 Descriptive statistics

Study one – W20

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
Confirmation	125	1.00	1.00	1.0000	.00000
Industry	125	2.00	2.00	2.0000	.00000
job_title	125	1.00	6.00	5.0080	1.72970	-1.723	.217	1.395	.430
forced_1	125	1.00	5.00	3.8480	1.03219	-1.210	.217	1.176	.430
opp_1	125	1.00	5.00	3.7280	1.02686	-.702	.217	-.301	.430
opp_2	125	1.00	5.00	4.0560	.84533	-1.084	.217	1.455	.430
evo_1	125	1.00	5.00	3.5920	1.04029	-.337	.217	-.891	.430
forced_2	125	1.00	5.00	3.5520	1.13205	-.470	.217	-.938	.430
evo_2	125	2.00	5.00	4.2400	.70023	-.800	.217	.966	.430
opp_3	125	2.00	5.00	4.1440	.82992	-1.050	.217	.985	.430
evo_3	125	1.00	5.00	3.1840	1.18719	.018	.217	-1.197	.430
forced_3	125	1.00	5.00	4.0240	.90218	-1.119	.217	1.401	.430
forced_4	125	1.00	5.00	3.8800	.93843	-1.244	.217	1.437	.430
evo_4	125	1.00	5.00	3.8160	1.01110	-.811	.217	-.208	.430
forced_5	125	1.00	5.00	3.1680	1.30592	-.030	.217	-1.384	.430
opp_4	125	1.00	5.00	3.6160	1.22990	-.682	.217	-.664	.430
opp_5	125	1.00	5.00	3.2800	1.17501	-.200	.217	-1.049	.430
opp_6	125	1.00	5.00	3.4400	1.18049	-.407	.217	-.967	.430
forced_6	125	1.00	5.00	3.8640	1.01078	-.865	.217	-.093	.430
evo_5	125	1.00	5.00	3.9440	.87348	-1.071	.217	1.139	.430
evo_6	125	1.00	5.00	3.2320	1.22564	-.108	.217	-1.277	.430
opp_7	125	1.00	5.00	3.6480	1.00206	-.514	.217	-.617	.430
structure_1	125	1.00	5.00	3.2000	1.28891	-.106	.217	-1.260	.430
structure_2	125	1.00	5.00	3.4320	1.13831	-.580	.217	-.715	.430
structure_3	125	1.00	5.00	3.3280	1.21666	-.273	.217	-1.267	.430

structure_4	125	1.00	5.00	3.0880	1.39131	-.123	.217	-1.384	.430
structure_5	125	1.00	5.00	2.9600	1.20750	.189	.217	-1.092	.430
structure_6	125	1.00	5.00	3.1360	1.24008	-.134	.217	-1.153	.430
ict_1	125	1.00	5.00	3.5520	1.16020	-.538	.217	-.577	.430
ict_2	125	1.00	5.00	3.6480	1.13774	-.573	.217	-.439	.430
ict_3	125	1.00	5.00	3.6240	1.12640	-.590	.217	-.401	.430
ict_4	125	1.00	5.00	3.6800	1.17501	-.776	.217	-.139	.430
ict_5	125	1.00	5.00	3.7200	1.18866	-.728	.217	-.399	.430
budget_1	125	1.00	5.00	3.8560	1.11228	-1.068	.217	.297	.430
budget_2	125	1.00	5.00	3.1120	1.27137	-.070	.217	-1.199	.430
budget_3	125	1.00	5.00	3.8000	1.19812	-1.121	.217	.425	.430
budget_4	125	1.00	5.00	3.7360	1.17874	-.882	.217	-.205	.430
budget_5	125	1.00	5.00	3.8240	1.10032	-.972	.217	.198	.430
budget_6	125	1.00	5.00	3.4080	1.30814	-.576	.217	-.894	.430
culture_1	125	1.00	5.00	3.9520	.98256	-1.147	.217	1.039	.430
culture_2	125	1.00	5.00	4.2240	.86008	-1.224	.217	1.555	.430
culture_3	125	2.00	5.00	4.4240	.69866	-1.238	.217	1.795	.430
culture_4	125	2.00	5.00	4.2560	.81224	-.962	.217	.460	.430
culture_5	125	1.00	5.00	3.5040	1.14035	-.391	.217	-.922	.430
culture_6	125	1.00	5.00	3.8480	.97597	-.747	.217	.108	.430
culture_7	125	2.00	5.00	4.4640	.65432	-1.357	.217	2.824	.430
quality_1	125	2.00	5.00	3.9920	.73502	-.359	.217	-.104	.430
quality_2	125	3.00	5.00	4.2240	.64588	-.248	.217	-.670	.430
quality_3	125	2.00	5.00	4.2640	.66167	-.518	.217	.062	.430
quality_4	125	3.00	5.00	4.2400	.68862	-.353	.217	-.862	.430
delivery_1	125	1.00	5.00	3.6320	.92052	-.586	.217	.041	.430
delivery_2	125	1.00	5.00	3.8000	.97551	-.699	.217	.245	.430
cost_1	125	1.00	5.00	3.6320	.85700	-.146	.217	-.200	.430
cost_2	125	2.00	5.00	3.7760	.79173	-.072	.217	-.567	.430
cost_3	125	1.00	5.00	3.6640	.86083	-.291	.217	.252	.430
cost_4	125	2.00	5.00	3.6720	.92262	-.049	.217	-.887	.430
flex_1	125	1.00	5.00	3.7760	.87864	-.269	.217	-.277	.430
flex_2	125	1.00	5.00	3.6320	.97993	-.403	.217	-.166	.430

job_position	125	1.00	3.00	2.1040	.87827	-.205	.217	-1.682	.430
func_unit	125	1.00	7.00	4.8960	2.11684	-.680	.217	-.827	.430
ownership	125	1.00	5.00	2.8080	1.53820	.166	.217	-1.584	.430
maturity	125	1.00	5.00	2.6720	.89601	-.736	.217	.373	.430

Study two – W21

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	Std. Error
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Error
I1	320	1.00	5.00	4.0062	.89930	-1.366	.136	2.138	.272
I2	320	1.00	5.00	3.9500	.99087	-1.106	.136	1.031	.272
I3	320	1.00	5.00	4.1344	.83276	-1.272	.136	2.419	.272
I4	320	1.00	5.00	3.7906	.87989	-.829	.136	.604	.272
I5	320	1.00	5.00	3.9656	.96429	-.902	.136	.236	.272
I6	320	1.00	5.00	4.1813	.85919	-1.193	.136	1.410	.272
I7	320	2.00	5.00	4.3031	.69840	-.939	.136	1.207	.272
I8	320	1.00	5.00	3.6812	1.03767	-.619	.136	-.505	.272
I9	320	1.00	5.00	4.0656	.83351	-1.039	.136	1.441	.272
P1	320	1.00	5.00	4.0594	.80724	-1.008	.136	1.429	.272
P2	320	1.00	5.00	3.9656	.85395	-1.180	.136	1.845	.272
P3	320	1.00	5.00	2.8531	1.27441	.205	.136	-1.216	.272
P4	320	1.00	5.00	3.5844	1.06191	-.547	.136	-.527	.272
P5	320	1.00	5.00	3.3969	1.10654	-.387	.136	-.745	.272
R1	320	1.00	5.00	3.8281	1.00086	-1.047	.136	.777	.272
R2	320	1.00	5.00	4.0625	.90756	-1.263	.136	1.758	.272
R3	320	1.00	5.00	4.0313	.88825	-1.061	.136	1.056	.272
R4	320	1.00	5.00	3.6313	1.12883	-.685	.136	-.503	.272
R5	320	1.00	5.00	3.4469	1.16519	-.487	.136	-.814	.272
Q1	320	2.00	5.00	4.2781	.69986	-.554	.136	-.397	.272
Q2	320	2.00	5.00	4.3344	.71091	-.691	.136	-.351	.272
Q3	320	3.00	5.00	4.4719	.65712	-.863	.136	-.363	.272

Q4	320	2.00	5.00	4.3594	.69857	-.793	.136	.059	.272
D1	320	1.00	5.00	3.9031	.81905	-.474	.136	.158	.272
D2	320	1.00	5.00	4.0469	.91709	-.952	.136	1.023	.272
C1	320	2.00	5.00	3.7656	.84063	.019	.136	-.859	.272
C2	320	1.00	5.00	4.0594	.77555	-.468	.136	-.049	.272
C3	320	2.00	5.00	3.8219	.82828	-.157	.136	-.674	.272
C4	320	1.00	5.00	3.8594	.89350	-.410	.136	-.209	.272
F1	320	1.00	5.00	3.9219	.89766	-.709	.136	.370	.272
F2	320	1.00	5.00	3.9500	.91521	-.592	.136	-.100	.272
QUALTA VG	320	3.00	5.00	4.3609	.55125	-.683	.136	-.365	.272
DELA VG	320	1.00	5.00	3.9750	.79339	-.789	.136	.801	.272
COSTA VG	320	2.50	5.00	3.8766	.63776	.204	.136	-.864	.272
FLEXAV G	320	1.00	5.00	3.9359	.80737	-.663	.136	.361	.272
OS1	320	1.00	5.00	3.5313	1.08233	-.462	.136	-.663	.272
OS2	320	1.00	5.00	3.1563	1.23200	.003	.136	-1.282	.272
OS3	320	1.00	5.00	3.7844	.96347	-.974	.136	.625	.272
OS4	320	1.00	5.00	3.2250	1.28385	-.275	.136	-1.214	.272
OS5	320	1.00	5.00	3.1500	1.17551	-.119	.136	-1.052	.272
OS6	320	1.00	5.00	3.4750	1.09688	-.467	.136	-.612	.272
IT1	320	1.00	5.00	4.1625	.96254	-1.349	.136	1.708	.272
IT2	320	1.00	5.00	4.0562	.92168	-1.127	.136	1.300	.272
IT3	320	1.00	5.00	4.1281	.86692	-1.093	.136	1.389	.272
IT4	320	1.00	5.00	4.1688	.81692	-1.049	.136	1.331	.272
IT5	320	1.00	5.00	4.1969	.82780	-1.182	.136	1.781	.272
BT1	320	1.00	5.00	4.0500	.95215	-1.240	.136	1.424	.272
BT2	320	1.00	5.00	3.6125	1.18765	-.761	.136	-.449	.272
BT3	320	1.00	5.00	3.9937	1.03237	-1.398	.136	1.808	.272
BT4	320	1.00	5.00	4.0687	.95097	-1.238	.136	1.341	.272
BT5	320	1.00	5.00	4.1031	.96262	-1.226	.136	1.224	.272
BT6	320	1.00	5.00	3.9094	.99587	-.986	.136	.516	.272
OC1	320	1.00	5.00	4.2781	.87860	-1.467	.136	2.255	.272
OC2	320	1.00	5.00	4.2469	.79477	-1.150	.136	1.510	.272
OC3	320	1.00	5.00	4.4312	.71808	-1.418	.136	2.649	.272
OC4	320	2.00	5.00	4.5156	.64793	-1.346	.136	2.084	.272

OC5	320	1.00	5.00	3.9875	.97291	-1.023	.136	.604	.272
OC6	320	1.00	5.00	3.2969	1.39950	-.382	.136	-1.185	.272
OC7	320	1.00	5.00	4.4625	.70722	-1.525	.136	3.114	.272
AVGOS	320	1.00	5.00	3.3075	.81917	.074	.136	-.502	.272
AVGIT	320	1.00	5.00	4.1425	.71329	-1.210	.136	2.153	.272
AVGBT	320	1.33	5.00	3.9563	.69455	-1.171	.136	2.118	.272
AVGOC	320	2.29	5.00	4.1741	.51704	-.475	.136	.177	.272

Appendix 4 Statistics results of Study one – W20

For Research Question 1:

Variance explained with the factors is 53.8 % which is satisfactory because we need to bear in mind that the study of strategy is heavily complex and contextual. We have conducted exploratory factor analysis to identify if there is more than one consistent pattern of functional level strategic process. We performed a Principal Component Analysis, Promax rotation with Kaiser normalization and absolute values less than 0.40 have been suppressed. Variance explained with the factors is 53.77% which is satisfactory because we need to bear in mind that the study of strategy is heavily complex and contextual. From Table 4.1.1, we can see the results of the explanatory factor analysis, which suggests that there are multiple forms of functional level strategic process. The pattern matrix in table 1 shows how each measure (questions) are clustered with other relevant measures and their respective loadings. To make reading more convenient please consider:

- Items start with I explains a specific setup of initiation stage, examples: I1 to I9 (9 items)
- Items start with P explains a specific setup of progression stage, examples: P1 to P5 (5 items)
- Items start with R explains a specific setup of realization stage, examples: R1 to R5 (5 items)

To check the reliability of measurers, we have calculated the coefficient alpha for each of the clusters shown in table 1, the results are given in Appendix 7. Cronbach's alpha measures internal consistency, which explains how closely related a set of items are as a group. As the average inter-item correlation increases, Cronbach's alpha increases as well. Cronbach's alpha is usually

expected to be around 0.70, however, it could vary according to the stage of theory development and the discipline you are working on (Lance et al., 2006). However, due to its sound content validity and early stage of theory development, a coefficient of around 0.60 is acceptable (Nunnally, 1967, p. 226). The results of the EFA are provided in following table 4.1.1:

Pattern Matrix

Questions	1	2	3
P4	.836		
R4	.771		
P2	.762		
I8	.603		
R3		.805	
R5		.673	
R1		.649	
P5		.514	
I5		.480	
P1			.769
I9			.645
R2			.608
I1			.557

Extraction Method: Principal Component Analysis.
 Rotation Method: Promax with Kaiser Normalization.
 a. Rotation converged in 6 iterations.
 b. Variance explained: 53.77%

Results of EFA

Processes excerpted from factor 1:

1. Process 1: I8 > P2 > R4
2. Process 2: I8 > P4 > R4

Processes excerpted from factor 2:

3. Process 3: I5 > P5 > R5
4. Process 4: I5 > P5 > R1
5. Process 5: I5 > P5 > R3

Processes excerpted from factor 3:

6. Process 6 :I1 > P1> R2
7. Process 7: I9 > P1 > R2

For Research Question 2:

Mediation results

Hypothesis	Process	Indirect effect	BootSE	BootLLCI	BootULCI
H1b - 1	I8 > P2 > R4	.06	.03	.00	.12
H1b - 2	I8 > P4 > R4	.03	.04	-.05	.11
H1b - 3	I5 > P5 > R5	.12	.05	.03	.23
H1b - 4	I5 > P5 > R1	.01	.03	-.04	.07
H1b - 5	I5 > P5 > R3	.02	.02	-.02	.06
H1b - 6	I1 > P1> R2	.09	.05	.02	.21
H1b - 7	I9 > P1 > R2	.14	.06	.03	.28

For Research Question 3:

Serial mediation results

Hypothesis	Process	Indirect effect	BootSE	BootLLCI	BootULCI
H2 - 1	I8 > P2 > R4 > QUALITY	.01	.00	.00	.02
H2 - 2	I8 > P2 > R4 > COST	.01	.01	.00	.03
H2 - 3	I8 > P2 > R4 > FLEXIBIITY	.00	.01	.00	.02
H2 - 4	I8 > P2 > R4 > DELIVERY	.00	.01	.00	.02
H2 - 9	I5 > P5 > R5 > QUALITY	.00	.01	-.02	.02
H2 - 10	I5 > P5 > R5 > COST	.03	.02	.00	.06
H2 - 11	I5 > P5 > R5 > FLEXIBIITY	.02	.01	.00	.05
H2 - 12	I5 > P5 > R5 > DELIVERY	.02	.01	.00	.05
H2 - 21	I1 > P1> R2 > QUALITY	.01	.01	-.01	.02
H2 - 22	I1 > P1> R2 > COST	.01	.01	.00	.03
H2 - 23	I1 > P1> R2> FLEXIBIITY	.02	.02	.00	.06
H2 - 24	I1 > P1> R2 > DELIVERY	.02	.01	.00	.04
H2 - 25	I9 > P1 > R2 > QUALITY	.01	.01	-.01	.03

H2 – 26	I9 > P1 > R2 > COST	.03	.02	.00	.06
H2 – 27	I9 > P1 > R2 > FLEXIBIITY	.04	.02	.01	.10
H2 - 28	I9 > P1 > R2 > DELIVERY	.03	.02	.01	.08

Appendix 5 Internal reliability of measures

	Items	Cronbach Alpha	Hotelling T-sq
Strategic process	22	0.831	.00
Organizational structure	5	0.734	.00
Organizational culture	6	0.746	.00
Employee budgetary participation	7	0.771	.00
Use of information technology	5	0.869	.00
Cost	4	0.761	.00
Quality	4	0.808	.00
Flexibility	2	0.799	.00
Delivery	2	0.739	.00
Factor 1 (EFA) – W21	5	0.831	.00
Factor 2 (EFA) – W21	3	0.689	.00
Factor 3 (EFA) – W21	3	0.389	.00

Appendix 6 Additional industry analysis

Implementation of strategy

Providing a framework to identify specific performance success criteria would be beneficial for managerial decision making. The possibility of strategic options based on the studied factors would be limitless. However, if managers could identify ‘most likely’ situations, then it would allow them time to establish key tasks and allocate resources to tackle it. The key areas of performance depending on the priorities need to be backed by appropriate functional support. Managers also need to carefully select and implement appropriate controls. To ensure effectiveness of these controls, managers also need to develop customized information system and provide appropriate structural and cultural aspects.

	Most suitable process		
	Stage	Study one	Study two
QUALITY	Initiation	FORCED	FORCED
	Progression	EVO	OPP
	Realization	EVO	FORCED
COST	Initiation	EVO	FORCED
	Progression	OPP	OPP
	Realization	OPP	FORCED
FLEXIBILITY	Initiation	FORCED	OPP
	Progression	FORCED	FORCED
	Realization	FORCED	FORCED
DELIVERY	Initiation	FORCED	FORCED
	Progression	FORCED	OPP
	Realization	FORCED	FORCED

Managers seek to achieve competitive advantage over the rivals by excelling in certain performance criterion(s). It's difficult for a company to be the champion in all aspects of

performance, in this case – quality, cost, flexibility and delivery. If we can provide a generic framework of process to achieve certain performance(s), it would help managers to plan the specific set of operational deliverables. There are number of techniques such as - Ishikawa diagrams, Delphi method, brainstorming, role playing, soft systems methodology which have successfully implemented by companies to stimulate employees thinking and behaviors positively. However, rather than providing specific technique to deal with general situations, we are suggesting a generic process framework which will address specific situations.

From the table we can see that each of the performances influenced by the strategic processes differently. Although, both W20 (study one) and W21 (study two) are collected from USA manufacturing industry, but the relationship between performance priorities and functional level strategic processes have changed according to the contexts. We could also note the overwhelming presence of 'Forced' conditions during functional level strategic processes. Based on these ideas, I want to suggest that: a) Institutionalism works at the functional level strategic process: As shown in the table, the most appropriate processes for specific priorities differ across the studies although both belong to same industry. Therefore, to make better strategic judgements managers need to know their niche sub sector very well rather than basing their decisions on the overall industry trends and ploys, b) Forced is more dominant than opportunistic: As assumed earlier, forced driven actions are leading the way when it comes to influencing performance priorities during functional level strategic process. From the table we can see that 15 out of 24 stages are forced related, and when it comes to realization 6 out of 8 of them are forced related.

Positive influence of Evolutionary Strategic Process

	Stage	W21	After moderation analysis - W21
QUALITY	Initiation	FORCED	FORCED/EVO
	Progression	OPP	OPP/EVO
	Realization	FORCED	FORCED/EVO
COST	Initiation	FORCED	EVO
	Progression	OPP	EVO
	Realization	FORCED	EVO
FLEXIBILITY	Initiation	OPP	FORCED
	Progression	FORCED	OPP
	Realization	FORCED	FORCED
DELIVERY	Initiation	FORCED	EVO
	Progression	OPP	EVO
	Realization	FORCED	EVO

During evolutionary led strategic processes, strategic dialogues are initiated based on experimentation/brainstorming. Unlike other processes it usually progresses along informal paths, at the discretion of functional/business level managers, and eventual implementation is based on a trial-and-error approach or compliance. This process is likely to favor situations like running side projects, catching up on consequences of agreements, R & D etc.; and the influence should be solid over the time. From the above table we can see that after running the moderated serial mediations the overall conditional effect is higher than other two strategic processes when it comes to priorities on quality, cost and delivery. This suggest that with proper controls such as culture a firm could develop functional units which are precise enough to be compliant and adaptive enough to be open minded about further learnings.

Appendix 7

Strategic process	11	12	13	14	15	16	17	18	19	P1	P2	P3	P4	P5	R1	R2	R3	R4	R5
	4.01	3.95	4.13	3.79	3.97	4.18	4.30	3.68	4.07	4.06	3.97	2.85	3.58	3.40	3.83	4.06	4.03	3.63	3.45
Strategic process	11	12	13	14	15	16	17	18	19	P1	P2	P3	P4	P5	R1	R2	R3	R4	R5
	3.85	3.72	4.06	3.59	3.55	4.24	4.14	3.18	4.02	3.88	3.82	3.17	3.62	3.28	3.44	3.86	3.94	3.23	3.65
Difference / 5	0.03	0.04	0.02	0.04	0.08	-0.01	0.03	0.10	0.01	0.04	0.03	-0.06	-0.01	0.02	0.08	0.04	0.02	0.08	-0.04
	3.2	4.4	1.6	4.0	8.3	-1.2	3.2	9.9	0.8	3.6	3.0	-6.3	-0.6	2.3	7.8	4.0	1.7	8.0	-4.0
Management controls	OS1	OS2	OS3	OS4	OS5	OS6	IT1	IT2	IT3	IT4	IT5	BT1	BT2	BT3	BT4	BT5	BT6	OC1	OC2
	3.53	3.16	3.78	3.23	3.15	3.48	4.16	4.06	4.13	4.17	4.20	4.05	3.61	3.99	4.07	4.10	3.91	4.28	4.25
Management controls	OS1	OS2	OS3	OS4	OS5	OS6	IT1	IT2	IT3	IT4	IT5	BT1	BT2	BT3	BT4	BT5	BT6	OC1	OC2
	3.20	3.43	3.33	3.09	2.96	3.14	3.55	3.65	3.62	3.68	3.72	3.86	3.11	3.80	3.74	3.82	3.41	3.95	4.22
Difference / 5	0.07	-0.06	0.09	0.03	0.04	0.07	0.12	0.08	0.20	0.10	0.10	0.04	0.10	0.04	0.07	0.06	0.10	0.07	0.00
	6.6	-5.5	9.1	2.7	3.8	6.8	12.2	8.2	10.1	9.8	9.5	3.9	10.0	3.9	6.7	5.6	10.0	6.5	0.5
Operational performance	Q1	Q2	Q3	Q4	D1	D2	C1	C2	C3	C4	F1	F2							
	4.28	4.33	4.47	4.36	3.90	4.05	3.77	4.06	3.82	3.86	3.92	3.95							
Operational performance	Q1	Q2	Q3	Q4	D1	D2	C1	C2	C3	C4	F1	F2							
	3.99	4.22	4.26	4.24	3.63	3.80	3.63	3.78	3.66	3.67	3.78	3.63							
Difference / 5	0.06	0.02	0.04	0.02	0.05	0.05	0.03	0.06	0.03	0.04	0.03	0.06							
	5.7	2.2	4.2	2.4	5.4	4.9	2.7	5.7	3.2	3.7	2.9	6.4							

Appendix 8 Correlation table – W21

	OS	IT	BT	OC	Factor1	Factor2	Factor3	Quality	Delivery	Cost	Flexibility
OS	1	.185***	.372***	.309***	.244***	.442***	.462***	.135*	.190***	.272***	.127*
IT	.185***	1	.593***	.465***	.499***	.256***	.303***	.513***	.457***	.508***	.357***
BT	.372***	.593***	1	.522***	.463***	.339***	.345***	.399***	.373***	.452***	.348***
OC	.309***	.465***	.522***	1	.473***	.262***	.249***	.411***	.408***	.272***	.265***
Factor1	.244***	.499***	.463***	.473***	1	.337***	.354***	.366***	.325***	.359***	.196***
Factor2	.442***	.256***	.339***	.262***	.337***	1	.165***	.239***	.302***	.196***	.265***
Factor3	.462***	.303***	.345***	.249***	.254***	.354***	1	.172***	.289***	.172***	.265***
Quality	.135*	.513***	.399***	.411***	.366***	.165***	.172***	1	.548***	.615***	.504***
Delivery	.190***	.457***	.373***	.318***	.325***	.239***	.269***	.548***	1	.656***	.612***
Cost	.272***	.508***	.452***	.408***	.359***	.302***	.289***	.615***	.656***	1	.619***
Flexibility	.127*	.357***	.348***	.272***	.265***	.196***	.172***	.504***	.612***	.619***	1

** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (2-tailed).