Chapter 2 – Literature Review, Research Framework and Methodology
2.1 Literature review

A thorough review of the existing relevant literature has been conducted for pertinent artefacts. Roughly 415 Journal papers, government and analyst reports, articles and web literature have been reviewed. Of these, about 241 have been found to be relevant for this research topic and have been referred to accordingly. Table 2.1 provides a snapshot of the literature review.

Table 2.1: Snapshot of literature review

<table>
<thead>
<tr>
<th>Topic</th>
<th>Journals</th>
<th>Other Publication</th>
<th>Research/Analytics</th>
<th>International Institution</th>
<th>Others</th>
<th>Grand Total</th>
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Chapter 1 has leveraged the literature review in the areas of service industry, IT (Information Technology) industry, IT services and packaged software. Chapter 2 leverages literature review on research methodology outlined in the later part of this chapter. Chapter 3 has drawn most of the references from various websites and analyst reports. Chapter 4 leverages value chain literature review.

The section below outlines the outcome of literature review in the area of strategic management and related topics.

2.2 Strategic management literature review

2.2.1 Evolution of strategy

Strategy is not what it used to be or what it could be (Montgomery, 2008). In the past three decades it has been presented as an analytical problem. This perception, combined with strategy’s high stakes, has led to an era of specialist strategy consultants, armed with frameworks and techniques to help managers analyze their industries or position their firms for strategic advantage.
This way of thinking about strategy has generated substantial benefits. We now know far more than before about the role market forces play in industry profitability and the importance of differentiating a firm from its competitors. These gains have come in large part from the infusion of economics into the study of strategy. That merger added much-needed theory and empirical evidence to strategy’s underpinnings, providing considerable rigor and substance. But the benefits have not come without costs. A host of unintended consequences have developed from what in its own right could be a very good thing. Most notably, strategy has been narrowed to a competitive game plan, divorcing it from a firm’s larger sense of purpose; the CEO’s unique role as arbiter and steward of strategy has been eclipsed; and the exaggerated emphasis on sustainable competitive advantage has drawn attention away from the fact that strategy must be a dynamic tool for guiding the development of a company over time.

To redress these issues, we need to think about strategy in a new way – one that recognizes the inherently fluid nature of competition and the attendant need for continuous, not periodic, leadership.

2.2.2 Dynamic environments and strategy formulation

Successful organizations manage to change their strategy constantly in line with the changes in their competitive environment by using a dynamic approach to strategy formulation and implementation (Kazem, Feurer and John, 1995). A study demonstrates the way in which such an approach can be developed, using the experience of Hewlett-Packard. Hewlett-Packard achieves dynamic strategy formulation and implementation by making every individual a strategy owner. The research findings have implications for both researchers and practitioners. In dynamic environments, researchers need to constantly examine their assumptions and align the research objectives in line with chains in both the strategic focus of organizations and the underlying conditions of their competitive environments. For practitioners the implications are fourfold:

1. Strategy formulation cannot be detached from strategy implementation and in this context the process of management plays a key role.
2. Strategies should be developed at the point where the highest quality knowledge exists.
3. Supportive structures are necessary if individuals are to act readily on such knowledge.
4. The knowledge generation process relies on the availability of the appropriate tools and framework.
As the pace of change is increasing in competitive environments, strategy formulation and implementation is becoming a continuous and simultaneous process (Chaharbagi, Distel, Feurer, 1995). Such a process requires a dynamic approach to strategy ownership which enables organizations to develop strategies at the point where the most appropriate knowledge exists as mentioned in point 2 above. A framework for dynamic strategy leadership is used to ensure goal alignment by setting overall goals, directions, and boundaries rather than through the application of a complex proposal and approval system. Distributed strategy ownership can be applied in real business setting. With accelerating dynamics of competition, strategy formulation and implementation is becoming an increasingly difficult process. The traditional system of centralized project approval and resource allocation is too slow and inflexible to keep up with the speed of change. Furthermore, quality strategies require the availability of high quality knowledge including both vertical and horizontal knowledge. It is therefore necessary to overcome the split that often exists between horizontal or general knowledge that is available at the top of the organization and vertical or specialized knowledge that is available within the business units. This can be achieved by transferring strategy ownership throughout the organization so that strategies can be formulated where the optimal knowledge base exists. In order to ensure speed, flexibility and a high level of commitment this must also include the transfer of responsibilities such as resource allocation and product and market scope definition. The role of the corporate level therefore changes from determining areas of activities, direction and resources to setting boundaries and providing an overall vision. As a result, the strategic decision process can be moved closer to the competitive environments in which the business units of an organization operate. Hewlett-Packard has demonstrated how a dynamic approach to strategy formulation and implementation together with distributed strategy ownership can be achieved in a real business setting. Hewlett-Packard mapping approach can be used to allocate strategy ownership for projects and activities to the most appropriate point within the organization. The concept of the strategy ownership map is based on determining an optimal compromise between closeness to the competitive environment and maintaining an overview of the whole organization. It also allows the identification of projects which do not add any strategic value to the organization.

Strategy ownership is potentially a vast subject area and an area where research can be focused is in relation to ascertaining the degree to which strategy ownership can be distributed by examining the impact of such factors as the characteristics of the competitive
We can now begin to view strategy in a more dynamic way. In thinking about its strategy a company must first identify & colonize a distinctive strategic position in the industry. While competing in its current position a company must also search continuously for new strategic positions. After identifying another viable strategic position in its industry, the company then must attempt to manage both positions simultaneously (Markides, 1999).

A survey (Kazem and Rainer, 1996) was carried out among 33 large corporations in the UK, which aimed to discover the level of dynamics in the competitive environment, the level of dynamics in strategy development and the performance of the organizations. The results concluded that organizations can be successful in any competitive environment but that organizations with dynamic approaches to strategy development achieve superior performance in all competitive environments.

It is hypothesized that firms in high velocity, dynamic and fast changing environments should be more likely to develop good competitive knowledge and intelligence systems to help their decision makers make better informed decisions. However, the paper by Hall and Lundberg in 2005 shows that while there is a correlation between the velocity of the environment and managers’ needs for better competitive knowledge, there is almost no relation between the rate of change a firm faces and its competitive knowledge capability. This poses a significant problem for strategic planning because it suggests that managers, despite being aware of their relative competitive knowledge needs, are unlikely to actually have systematic access to the intelligence and knowledge they need to make good strategic decisions.

As the pace of change is increasing in competitive environments, strategy formulation and implementation is becoming a continuous and simultaneous process (Warren, 2008). As mentioned earlier, such a process requires a dynamic approach to strategy ownership which enables organizations to develop strategies at the point where the most appropriate knowledge exists.

Organizations face a challenging future where managers will need to work smarter to achieve growth and profit targets (Perrott, 2008). Senior managers and boards perceive the marketplace as becoming more complex and challenging. An environmental turbulence increases strategic issues, that challenge the way an organization plans and implements its strategy, emerge with greater frequency. It also brings in question, the responsibilities as well as balance of power and decision making between those who manage and those who govern. It
would be useful for management and board members to discuss perceptions of environment turbulence from time to time. This would enable meeting of minds regarding strategic position and future planning of the organization. It would also enable a better understanding of capability appreciation needed to respond to various levels of environmental turbulence. For successful survival, any organization needs to balance the condition of the environment, its business, and marketing strategy and its capability to implement them. Hence the tracking, monitoring and management of priority strategic issues become an imperative. Strategic issue processing techniques present the opportunity for managers to identify issues and plan appropriate actions that will enable them to maintain an alignment with the demand of external environment, no matter how turbulent.

Mulcaster (2009) developed a set of requirements for a Dynamic Strategy Management Process. Having evaluated the existing strategy management frameworks, models, methodologies, tools and techniques, the research concluded that although all approaches reviewed collectively met all the requirements, individually none of the approaches fulfilled all of these requirements.

2.2.3 Managing change

While the turbulence in business environments is adequately showcased and established in literature, one of the primary functions of management and one of its major responsibilities is to manage the process of change (Tom and Brian, 1993). Providing order, structure, and direction in areas where technology and organizational change invite chaos and turmoil requires an understanding of the effects of change on an organization and a dynamic strategy and ability to implement change with a minimum of disruption. To implement change effectively, a manager must understand the impact of the change on the people who will be affected. Employee resistance to change and stress must be examined to minimize their destructive nature on an organization. Managers must positively orient themselves towards change in a manner that will ensure their effective leadership. In order to be successful at implementing change, managers should endeavour to employ techniques of managing practically, actively, flexibly, and sensitively. People involvement through participative management may be the most important factor in the successful implementation of major change.

Effective organizational adaptation hinges on the ability of managers to not only envision and implement new organizational forms but also to direct and control people within them.
Managers' ability to successfully meet environmental conditions of tomorrow revolves around their understanding of organizations as integrated and dynamic wholes.

The prospect of change is frightening to most people, whether realistically or not (Westover, 2010). This fear of change often produces disruptions in organizations when the change is anticipated or announced. If managers do not adequately anticipate or plan for the responses of their subordinates to a proposed change, the change may be far more disruptive than is necessary. However, change agents have the opportunity to prepare those in the organization for such turbulent change, and therefore minimize potential organizational disruption and leverage the situation as an opportunity for competitive growth and progression.

2.2.4 Strategy and Execution

Today's strategists are at no loss for concepts and techniques to help them formulate strategies (Cannella, Albert and Hambrick, 1989). Over the past 15 years, consultants and academic researchers have introduced a variety of powerful and pragmatic tools for answering the question, ‘Where and how should we compete?’

Tools such as industry and competitor analysis, portfolio models, product life-cycle theory, and internal strength and weakness analysis have gained widespread use. Many executives now express satisfaction with the methods used to derive their business strategies. But many of these ‘best-laid plans’ are failing to see the light of day. Plans to innovate fizzle out after a series of task-force meetings; plans to improve quality get no farther than some airy rhetoric and the hiring of a ‘quality guru’; and plans to become the lowest-cost producer bog down when corporate officers balk at expensive outlays for plant modernization.

In short, many of the strategies simply aren't happening. Without successful implementation, a strategy is but a fantasy. This problem - how to convert a new strategy into concrete competitive success - is what managers now need frameworks for.

Strategy at many companies is almost completely disconnected from execution. Establishing a dedicated unit to orchestrate both will help to bridge the divide (Kaplan and Norton, 2005).

The process starts about midway through the fiscal year, when the CEO and the executive team get together to clarify their strategic vision and update existing strategy. Sometime afterward, similar processes take place at the business and functional units, led by unit heads and other senior executives. Towards the end of the third quarter, the finance function takes the baton, finalizing corporate and unit budgets. At the end of the year, the HR function conducts employees' annual performance reviews and orchestrates the setting of professional
goals and development programs. Throughout the year, meanwhile, different teams and units have engaged in performance reviews, corporate communication, and knowledge sharing.

Value is created and strategies are realized at business processes level, therefore, an integrated approach to strategy management should deploy strategic objectives to business processes where they can be implemented (Acur and Bititci, 2003). Further, to cope with ever-increasing rate of change in the operating environment of a business, strategy management should be a continuous business process, which provides a closed-loop-control system to facilitate management of the organizations performance, as a whole and in parts.

Research suggest that by focusing on business processes to create competitive advantage and by combining existing strategic and operations management tools and techniques, a business-process oriented approach to strategy management can be created that has positive effects on the organization. Strategy Management Process is more than the long term deployment of resources and processes. Strategy should focus on creating value that is independent for each business unit.

Cascading business strategy down into an R&D organization is widely used to drive strategy into the organization and align researchers and developers behind the organization’s strategy (Loch, 2008). However, the key benefit from cascading lies not in top-down control, but in clarity for the technical personnel about what they can contribute, in the motivation that stems from being able to voice their views and concerns, and in the dialogue between senior management and the R&D organization.

Dialogue is what mobilizes a technical organization to not only ‘make the numbers’ but also to contribute creatively according to its abilities. In other words, cascading becomes most useful when it is seen not as a tool to enforce strategy, but rather as an empowerment device for the R&D personnel to understand the sources of value for the business and to explore how to innovatively produce the highest value.

‘A brilliant strategy may put you on the competitive map. But only solid execution keep you there’ (Karla, Neilson and Powers, 2008). Unfortunately most companies struggle with implementation because they over rely on structural changes as reorganization, to execute their strategy. Though structural changes have its place in execution, it produces only short term gains. For example, one company reduced its management layers as a part of strategy to address disappointing performance. The cost plummeted initially, but layers soon crept back in. Research by Nelson, Martin and Power shows that execution exemplars focus their effort
on two layers for structural changes: clarifying decision rights ensuring information flow where it is needed.

2.2.5 Alignment between strategy and execution

Although increasing evidence suggests that superior performance requires alignment between firms' strategies and production processes, it is not known if such alignment is relevant for software development processes. The study (Ramesh et al, 2006) breaks new ground by examining how firms align their software processes, products, and strategies in Internet application development. Drawing upon the literatures in strategy, operations management, and information systems, four dimensions are identified that influence alignment: the business unit strategy, the level of product customization, the level of process customization, and the volume of customers. To examine how these dimensions are synchronized, Ramesh et al conducted detailed case studies of Internet application development in nine varied firms including both start-ups and established ‘brick and mortar’ companies. Their analysis revealed that the firms in their study do use differing processes for Internet application development, and that many of the firms match their software process choices to product characteristics, customer volume, and business unit strategies.

2.2.6 Business and IT strategy gap

Based on the research results, there is conclusive evidence that an alignment gap exists between business strategy and IT strategy (Justin et al, 2004-2005). The main reason why an alignment gap exists in any organization is the lack of business strategy and communication of the same. Another reason why an alignment gap exists is lack of strategic alignment between the different business areas. Both Business and IT executives identify instances where IT initiatives failed due to Business and IT strategic misalignment is caused by misalignment between different business areas. The most common solution suggested for minimizing the alignment gaps between business strategy and IT strategy is a clearly articulated vision and strategy. The development of business architecture is another suggested method of achieving strategic alignment across the organization. Other methods which are suggested to improve the strategic alignment include improving the business strategy development process, increasing the amount of collaborative strategy development between Business and IT departments, and including the CIO on the executive council.
The study by Oh and Pinsonneault (2007) compared two conceptual (resource-centred and contingency-based) and two analytical (linear and nonlinear) approaches that can be used to assess the strategic value of information technology. Two hypotheses related to these approaches were developed and tested based on matched survey data collected from the CEOs and CIOs of 110 firms. The results indicate that the resource-centered and contingency based approaches provide complementary understanding of the strategic value of IT. On the one hand, the contingency based approach is better at explaining the impact of cost related IT applications on firm performance. Alignment between business strategy and information systems strategy on cost reduction was found to have a significant negative association with firm expense. On the other hand, the resource-centered perspective has a stronger predictive ability of IT impact on firm revenue and profitability. The results of the study by Oh and Pinsonneault indicate that investments in growth-oriented applications were directly and positively related to firm revenue. An ANOVA test indicates that the nonlinear approaches provide additional insights that help to better understand the relationship between alignment and performance. The response surface method (RSM) shows that high-end strategic alignment (i.e., fit occurring when business strategy and IT strategy are both high) leads to superior performance compared to low end strategic alignment (i.e., fit occurring when business strategy and IT strategy are both low).

2.2.7 Strategic renewal

The prospect of an organization attempting strategic renewal usually brings to mind a dramatic change in strategy, such as Intel’s decision to make specialized chips and abandon its highly successful commodity chip business (Dale, 2009). However, a less dramatic but equally significant strategic renewal could involve modifying an organization’s out-of-date structure in order to implement management’s intended strategy. Such a renewal should be approached from two sides: making sure the strategy truly fits the current business environment and changing the structure to fit the intended strategy.

The ‘Wyler Oil Co.’ case focuses on the structural process of renewal. It illustrates top management’s need to analyze whether the operating structure is aligned with its intended strategy for a dynamic business environment. This is not an unusual problem because, when competition increases, many firms change their structure to concentrate on a few profitable activities, there by inadvertently compromising their intended strategy.
2.2.8 IT strategy

The IT strategic plan is more than an inventory of funded applications. IT should also address steps to improve the technical infrastructure and possible steps to improve the organization's overall ability to govern IT and perform IT initiatives.

Understanding the strategy of the organization is a must for developing an effective IT strategy (Behling and Shupe, 2006). Development of a strategic plan for technology begins with getting full support from appropriate senior management. The concepts upon which alignment is perceived are addressed in what today is called the enterprise architecture, bringing business and IT together. After identifying the major architectural components from an alignment point of view, the relationships among these components should be addressed. The technology plan should be clear, concise, and understandable by non-IT professionals. As the strategic plan is developed and projects are identified and prioritized, estimated financial returns should be included to ensure that the organization maintains profitability. Controlling maintenance costs begins at the inception of a project through project identification, planning, analysis, design, and implementation. A single information security measure in isolation will not likely to be successful; therefore, an organization should evaluate and enact multiple defensive measures that meet its needs and goals.

2.2.9 Evolution of software industry

There are papers (Patnaik and Sahoo, 2009 and others) in literature analyzing the evolution and changing scenario of the software industry from its inception till now and derives the patterns of the changing opportunities and challenges for the emergence and growth of this industry group. The longitudinal perspective focuses on the stages of development in the software industry, including the clear inflection points. In the early years, Indian software firms used to send people to customers' locations abroad to do development work. The primary work done by the Indian firms till the early 1990s was simple coding and testing. As time progressed, Indian software firms acquired higher skills in software development and project management. High skill levels allowed these firms to rapidly move up the value chain from simple coding to complete system design.

China and India are emerging as major entrants into the international software industry (Niosi and Tschang Ted, 2009). Both are rapidly learning through outsourcing with multinational enterprises (MNEs) from advanced nations, yet their paths to this dynamic sector are very different. Chinese software firms have focused on their domestic market by working with foreign MNEs, while they move cautiously abroad. Indian firms, which are already large,
continue to expand overseas as well as to climb up the value chain. Different approaches to MNEs provide useful perspectives. At the same time, the innovation systems approach is necessary to explain the foundations of the industry.

2.2.10 IT services - Build or Buy
As organizations implement enterprise systems, the issues of whether to ‘build or buy’ new IT modules, and if buying, how much to customize, continue to be key concerns. Gattiker, Goodhue and Marc, 2006, develop a framework in order to better understand effective information system module choice and customization from a strategy perspective. Analysis of the strategic importance of the IS module can provide general guidance for the amount of specialization that is appropriate. Build or Buy area is further detailed in the packaged application section.

2.2.11 Effective competitive strategy
Literature questions the accuracy & appropriateness of the description & prediction propositions underlying the elements of Porter's theory of generic competitive strategies (Buss et al, 2006). Two common conclusions evolved from these criticisms. Firstly, future strategy research should develop a more accurate & more relevant description of strategic priorities for today's business environment. Secondly, an examination of range of strategic & organizational variables with a contingency framework may provide more powerful insight into what contributes to an effective competitive strategy.

2.2.12 Strategy development processes
The literature (Gibons and Nic, 2003) seeks to make a number of contributions on strategy development processes. First, it explores a multidimensional conceptualization of strategy development and inquires whether specific process characteristics, such as intensity of situation analysis, comprehensiveness, cross-functional representation and communication quality contribute to organizational learning and strategy creativity. The relationship between comprehensiveness and performance has been contested in the literature over the past twenty years. It remains to be tested whether alternative functional relationships exist between comprehensiveness and performance (learning and creativity) in high velocity environments as previously suggested. Barringer and Bluedorn (1999) in a study of 169 manufacturing firms found a significant relationship between planning process variables and the construct of corporate entrepreneurship. This construct has emerged in recent years as representing a
behavioural orientation to be risk-taking and proactive (Stevenson & Jarillo, 1990). Thus, it is possible that a firm’s strategic position (entrepreneurial or conservative) could mediate the relationship between process characteristics and outcomes such as creativity and learning.

2.2.13 Structuring around strategy
Throughout most of modern business history, corporations have attempted to unlock value by matching their structures to their strategies (Kaplan and Norton, 2006). As mass production took hold in the nineteenth century, for instance, companies generated enormous economies of scale by centralizing key functions like operations, sales, and finance. A few decades later, as firms diversified offerings and moved into new regions, a rival model emerged. Corporations such as General Motors and DuPont created business units structured around products and geographic markets. The smaller business units sacrificed some economies of scale but were more flexible and adaptable to local conditions.

2.3 Gaps in the literature
- Although there exists a large amount of literature on the software services industry, there is very limited literature available on PSASVs (Packaged Software Application Service Vendors) and Packaged Software Application Services.
- Scattered literature is available on the variables affecting the software services industry. There is very limited literature available on the variables playing crucial roles in the PSASV industry.
- The concept of value chain is well-defined for the manufacturing sector but its application to the services sector is limited.
- There is little to no literature available on the competitive forces at work in the PSASV industry.
- There is little to no trace of research conducted around the strategy framework to be adopted for PSASVs in the literature.

2.4 Objectives of the research
The overall objective of evolving a suitable strategy framework for the PSASVs, inter alia, includes the following specific objectives -
1. To identify the set of variables which are important for the successful performance of PSASVs and to study their inter-relationship in the service creation and delivery
2. To prepare the generic value chain of such firms and identify the weak areas in the current value chain of such PSASVs.

3. To understand the competitive forces in the industry and the trends in competitive dynamics leading to strategic responses.

4. To study the value chains of select firms to understand the value proposition, value creation and value delivery of services.

5. To develop a conceptual strategy framework for the PSASVs which will help formulate and implement strategies for value enhancement.

2.5 Research framework

Traditional research approaches and processes have failed to develop strategic understanding which can be effectively and efficiently applied in highly dynamic environments. This is because research objectives and user needs are often misaligned and user needs change rapidly over time. As a result, what is generated often lacks relevance and general applicability, and there remain numerous issues that need to be addressed. Aim of the research framework used here is to close the gap between the development and application of knowledge. This framework uses a contingent approach to research that adjusts the research objectives and processes to the new emerging issues that are related to the needs of users and the pace of change in the environment considered. As the level of dynamics in the environment increases, the research places more emphasis on knowledge generation. If the environment remains static, the research is focused on validation and generalization of existing knowledge. Using this framework, the research tries to maintain their independence while actively ensuring relevance and an integrated understanding of the whole.

2.5.1 The Design school

The research framework that has been followed in the study include the research framework that stems from the existing literature in the area of strategic management, especially the design school and that has been developed keeping in mind multiple factors like the packaged services industry, the degree of clarity of the identified research problems, the degree of control that can be achieved over the different variables, the unit of study, timescale and the available limited resources. Before discussing the research design and methodology in detail, let us look into the research framework that has been developed to help identify the process to be followed towards achieving the set research objectives. The research framework for the current study was crafted not only from literature surveyed and general understanding of the
packaged software services process and players involved in the packaged software services industry but also based on the principles of strategic management. Strategic management has become an academic discipline in its own right, like marketing and finance. Literature on strategic management is vast and dates back to the writing on military strategy for example - Sun Tzu wrote his ‘Art of War’ in about the fourth century B.C. (Sun Tzu, 1971). Having researched available literature thoroughly, Mintzberg, Ahlstrand and Lampel (1998) identified ten key schools of thought, which they then classified into three groupings. The first they called Prescriptive School, one that are more concerned with how strategies should be formulated than with how they necessarily do form. This grouping comprises of the Design, Planning and Positioning Schools. They then described a second main group, which they termed Descriptive Schools, comprising Entrepreneurial, Cognitive, Learning, Power, Cultural and Environmental Schools. These set out not to prescribe how strategy should be made but rather to describe how it is made in practice. The final group comprises of just one Configurational school.

The research framework developed for the current study is highly influenced by the Design School. As per Mintzberg, Ahlstr and Lampel (1998) the design school represent, without question, the most influential view of the strategy formation process. As its simplest, the design school proposes a model of strategy making that seeks to attain a match, or fit, between internal capabilities and external possibilities. In the words of this school’s best known proponents, Economic strategy will be seen as the match between qualifications and opportunities that positions a firm in its environment (Christensen et al., 1982). The origin of the design school can be traced back to two influential books written at the University of California (Berkeley) and at M.I.T.: Philip Selznick’s Leadership in Administration of 1957, and Alfred D. Chandler's Strategy and Structure of 1962. Selznick (1957), introduced the notion of distinctive competence, discussed the need to bring together the organization's internal state with its external expectations, and argued for building policy into organization's social structure. Chandler (1962), in turn, established this school’s notion of business strategy and its relationship to structure. The real impetus for the design school came from the General Management Group at the Harvard Business School, beginning especially with the publication of its basic textbook, Business Policy: Test and Cases, which first appeared in 1965 (by Learned, Christensen, Andrews and Guth). The basic design school model places primary emphasis on the appraisal of the external and internal situations, the former uncovering threats and opportunities in the environment, the latter revealing strengths and
weaknesses of the organization (Christensen et al., 1982). The analysis of internal and external situations helps in developing the key success factors and distinctive competencies, which then help in the creation of strategy. Once alternative strategies have been determined, the next step in the model is to evaluate them and choose the best one. In other words, several alternative strategies have been designed and are evaluated so that one can be selected (Andrew, 1987). Rumelt (1997), a DBA from Harvard General Management group, has perhaps provided the best framework for making this evaluation, in terms of series of tests i.e.

a) **Consistency**: The strategy must not present mutually inconsistent goals and policies.

b) **Consonance**: The strategy must represent an adaptive response to the external environment and to the critical changes occurring within it.

c) **Advantage**: The strategy must provide for the creation and or maintenance of a competitive advantage in the selected area of activity.

d) **Feasibility**: The strategy must neither overtax available resources nor create unsolvable sub-problems.

Finally, once a strategy has been agreed upon, it should then be implemented.

### 2.5.2 Overcoming current research shortcomings

Research into strategy formulation and implementation encompasses a wide range of issues which include the study of competitive environments, values, goals, capabilities, structures and processes together with potential courses of action that may result in a desirable outcome. The full potential of research has been realized by eliminating narrow focus, lack of relevance, lack of problem understanding and neglect of the dynamics of change. These shortcomings are detailed individually below.

Narrow focus has been eliminated in this research by redirecting the research efforts towards developing interdisciplinary knowledge, using a process approach to research.

Lack of relevance has been addressed leveraging Ashton that research is not concerned merely with its own process, but is committed also to disseminating results in ways that help to improve the ‘state-of-the-art’ and Murray, that the research represents a balance between novelty and that which is already known. In this way, the research process culminates in findings, the application of which forms the basis for formulating and implementing creative strategies for PSASVs. Research objectives, therefore, have been drawn in the light of the context in which the outcome is to be applied. It follows that the development of research objectives and methodology represent a two-way process involving both researcher and users.
Lack of problem understanding arises because research processes by and large utilize a de-compositional approach through which the problem or issue under investigation is divided into several parts. These parts are then studied individually in order to develop an understanding of the whole. The findings are then generalized. The de-compositional approach is subject to two major shortcomings. First, the outcome of the research can be greatly influenced by the basic research assumptions. To overcome this shortcoming, a more holistic approach which encompasses several views (e.g. functional, hierarchical and process views) has been applied. In the context of strategy formulation and implementation, research therefore considers a host of issues that span economics, technology, systems, human behaviour, learning theory and creativity. This is because there is a need to visualize the whole picture before trying to analyse and test the behaviour of specific parts in greater detail. Zabriskie has illustrated this notion vividly in an analogy: ‘there is no use to understand the function of a carburettor in great detail if the engine in which it has to operate is not considered.’ The second major shortcoming of the de-compositional approach relates to different business settings being subject to different conditions. These differences make it difficult to generalize the research outcome. The design of this research process, therefore, considers the context and assumptions simultaneously. Neglecting the dynamics of change has been addressed using a hybrid and iterative research methodology leveraging the learning cycles.

2.5.3 Research framework design considerations
The following requirements have been considered in the design of the framework:

1. The research focuses on those elements of strategy formulation and implementation that yield high performance.
2. The research analyses strategy formulation and implementation in a holistic way to include strategic as well as operational issues.
3. The framework developed is able to incorporate current strategic knowledge.
4. The research findings are relevant to PSASV organizations operating in dynamic environments.
5. The research represents a continuous learning process to accommodate emerging issues.

The application of the appropriate research approach and process together with the role of researchers are crucial for the achievement of the above requirements. These are detailed individually below.
2.5.3.1 Research approach
The development, application and dissemination of knowledge in the field of strategy formulation and implementation have generally been in the domain of academics, consultants and industrialists. The goals, focus and research approaches of each of these groups differ widely.

Academics operate mostly from outside the organization and, hence, are not subject to many constraints. While this freedom can result in a high degree of novelty it also carries a number of disadvantages which relate largely to the use of incomplete information and the potential conflicts between researchers and users over research goals. Information which is used by academics for analytic purposes is usually acquired through surveys, secondary studies, interviews or short industry visits. This information is often fragmented because the external view often makes it difficult to assign a political, cultural and social meaning to the data acquired. Goal conflicts stem from differences that exist between the objectives of researchers and users: academic researchers are interested in knowledge acquisition while organizations aim to maximize their performance.

Often this difference results in a lack of co-operation as the research objectives of academics do not correspond directly with organization goals. This lack of co-operation culminates in the generation of partial knowledge. Consultants focus their activities largely on the business issues that need to be addressed by their clients while aiming to maximize the use and span of their knowledge base for other business opportunities. Consequently, the acquisition of new knowledge is limited to those areas that have commercial potential. Another major shortcoming of the research approach adopted by consultants is the lack of testing in determining the general applicability of the research findings.

A third research approach is that adopted by industrialists, which is generally known as action research. Using this approach, the researcher has a number of goals in relation to:

1. the understanding and improvement of current practices;
2. the enhancement of the problem-solving capacities of the practitioners with whom the researcher collaborates;
3. the advancement of knowledge about the practice itself.

The major shortcoming of action research is that the researcher is directly dependent on the organization for which the research is carried out. This dependence means that often it is not possible to perform experiments without due consideration of factors such as disruption to the organization’s operations. The research objective and process are further constrained by the
organization’s goals, which are not concerned primarily with the advancement and dissemination of knowledge to the research community at large. Consequently, the outcome of action research is heavily organization-specific. Furthermore, action research may require narrowing down the universe of potential solutions in order to match outcomes with the goals and limitations of the organization, thus further reducing the scope and use of the research findings.

None of the approaches highlighted above satisfies the design requirements of the framework for researching strategy formulation and implementation for PSASVs. Consequently, there has been a need for an alternative approach that builds on the strengths of existing approaches while overcoming their shortcomings.

2.5.3.2 Research process

The second important consideration in defining a framework for research in dynamic strategy formulation and implementation relates to the development of an appropriate research process.

Academic research typically employs a process which is based on the hypothetico-deductive method. This takes an open-loop format which goes only as far as addressing the researcher’s immediate objectives. Based on a formulated hypothesis, relevant concepts and techniques are selected and the required data are then collected. Using these concepts and techniques, the data are analysed for the acceptance or rejection of the postulated hypothesis. The results are then subjected to scrutiny in terms of the constraints that the research context imposes to ensure relevance.

Such a process is of limited use in researching dynamic strategy formulation and implementation, for a number of reasons:

1. There is insufficient knowledge to postulate a hypothesis. Most knowledge is generated through the research process itself.
2. Experimental testing of strategic issues in a scientific sense is not possible.
3. Experimental testing would require setting and reconstructing external conditions. However, this is not possible because external conditions change rapidly.
4. The hypothesis testing and refinement loops can be too time-consuming, thus diminishing their returns in highly dynamic environments.
5. Different business settings are subject to different conditions. These differences make it difficult to generalize the outcome of the research.
In researching strategy formulation and implementation, a closed-loop process is more appropriate. This process assumes that in reality there are no fixed and permanent solutions to a problem. A solution which is best today may not necessarily be the most appropriate tomorrow because of the dynamic nature of organizations and environmental conditions. In contrast to the open loop process, the closed-loop process attends to global objectives. These objectives are based on a general understanding of the problem and are aimed at satisfying the goals of both researcher and users, while also focusing on identifying issues that will lead to continuous improvements in organizational performance. Research techniques and tools are selected on the basis of dynamic conditions, as well as situation-specific goals, and the testing of hypotheses takes place within the environment of the real setting of the problem. The closed-loop process results in constant knowledge generation and is more result-oriented than the open-loop process.

Action research, as previously described, takes the participative approach one step further. Here, the researcher not only participates in the activity but will also direct and influence the way in which the activity is conducted. While participant observation enables the study of existing processes and behaviours, it does not provide the means to test the reliability of newly-acquired information. The role of an action researcher on the other hand is limited in identifying the underlying conditions and issues that are general in nature but specific in context. It is therefore felt necessary to define a new form of involvement in case of PSASVs to enable testing of new constructs in the organization while maintaining the independence that is necessary to generate new knowledge. This form of involvement can best be described as one of ‘responsible observation’.

Responsible observation closes the gap between participant observation and action research in that it enables the research to focus on the research goals from within the organization. Complete understanding of strategic issues requires more than passive observation. It requires active involvement in the real processes of the organization in order to develop a deeper knowledge of the underlying issues than can be gained from a neutral position. It requires furthermore the communication of the strategies developed, but not to the extent that these are imposed or ‘tested’ in a scientific sense. The best proof for the relevance of the strategies developed is if they are actively adopted by the organization. With responsible observation, the researcher does not become a member of the organization. The independence of the researcher’s stance ensures that the organization’s goals do not override the research goals.
and that the scope of the research is not limited by the scope of the organization. In this way, the potential for knowledge generation is significantly increased.

2.5.4 Research into strategy formulation and implementation for the dynamic industries

This has become one of the main focuses of academia and industry. Because, with the accelerating dynamics of competition, the key to competitiveness lies no longer in employing strategies that have been successful in the past or emulating the strategies of successful competitors: real competitive advantage results from a constant process of developing and implementing new strategies that will differentiate the organization from the rest of the industry in which it operates.

There is little consensus among researchers on how to design research processes that will help organizations like PSASV facing highly dynamic and uncertain environments to formulate and implement successful strategies. Some call for a more scientific approach which encompasses quantitative modelling and testing while others advocate action research and more descriptive approaches using case studies. The main problem is that there is no common perspective, vocabulary and conceptual base between different studies as issues are viewed differently, emphasizing isolated elements, and different approaches are taken to study the problems. As a result, the outcome represents isolated insights which do not provide organizations with an integrated understanding of formulating and implementing strategies.

2.5.4.1 Contingent research approach

Researching strategy formulation and implementation for dynamic environment like packaged software application services requires the right balance between quantitative and qualitative methods.

Figure 2.1: Contingent research approach for dynamic industries

Source: Creation by Author
A contingent research approach identifies such a balance (Rainer and Kazem). Using this approach, the degree to which quantitative and qualitative studies would be utilized depending on the dynamics of change is identified. This research focuses on developing conceptual knowledge by heavily relying on quantitative studies and qualitative study is leveraged for testing and validating existing conceptual knowledge in iterative way. This is depicted in figure 2.1

Using this framework, the research objectives and methodology are not fully predefined as they develop themselves throughout the research process. Such a framework embraces a number of learning cycles, the driving force behind are the new emerging issues. In the development of the framework, the shortcomings of the current research approaches have been considered.

The applied research framework overcomes the research shortcomings highlighted earlier and enables the realization of a contingent approach to research.

2.5.4.2 The framework

Based on the design considerations outlined above, a framework for researching dynamic strategy formulation and implementation has been developed and is detailed below.

The aim of framework for researching strategy formulation and implementation is to integrate the key requirements highlighted earlier with regard to the appropriate use of the research approach, process and the role of the researcher.

The overall research process comprises two interlinked cycles: knowledge generation and generalization cycles. Using this framework, knowledge is generated by formulating new ideas, models and hypotheses which are then tested to determine their relevance in and for the organization. The link between knowledge generation and application ensures that the knowledge is developed for the advantage of both the researcher and user. The application of knowledge will bring to light new issues, thus providing new opportunities for the advancement of knowledge.

The generalization cycle is responsible for:

1. Verifying the research results obtained from the knowledge generation cycle; and
2. Determining the degree of general applicability of the knowledge generated.

The above items require data from organizations facing similar issues. The way in which knowledge generation and the generalization cycles are treated depends on the dynamics of the environment considered. According to the contingent approach, the knowledge generation will dominate the research efforts in highly dynamic and uncertain environments. On the
other hand, in more static environments, the main emphasis of the research will be placed on
the generalization cycle. In this connection, the role of the researcher is that of responsible
observer who has to ensure the right balance between the use of knowledge generation and
generalization.

The framework presented above differs from traditional research approaches in that the
development and advancement of knowledge is isolated from organizational constraints while
responsible observation ensures relevant and integrated understanding. The former
overcomes the major shortcoming of action research, which is dependence, while the latter
overcomes the major shortcoming of participative observation, which is passive involvement.

2.5.4.3 Phases of the research
The defined research framework breaks down the research work into five distinct phases
(figure 2.2), thus making it more manageable given the available resources and time in hand.
The first being the exploration of the existing variables as available in literature affecting the
performance of dynamic industries, the second being the identification of specific variables
using the quantitative analysis, the third phase being identifying the forces at work in the
PSASV industry, the fourth phase consisting of value chain analysis and the strategies to be
adopted for the PSASVs and the final stage being to test those strategies and undertake
necessary modifications. Last phase is also leveraged to define the conceptual strategy model
for PSASVs.

Figure 2.2: Phases identified as per the research framework

Source: Creation by Author

Table 2.2 summarizes the mapping of the research objectives with the phases and the
methodologies applied as part of the research framework.
Table 2.2: Research objectives and phase mapping

<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Methodology</th>
<th>Success Measurement Criteria / Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To identify the set of variables which are important for the successful performance of PSASVs and to study their inter-relationship in the service creation and delivery</td>
<td>Quantitative Analysis (Factor Analysis, Principal Component Analysis, Rotated Component Matrix, Correlation, Regression analysis), Case Study Analysis</td>
<td>Variables List and their degree of impact on the firms’ performance</td>
</tr>
<tr>
<td>2</td>
<td>To prepare the generic value chain of such firms and identify the weak areas in the current value chain of such PSASVs</td>
<td>Quantitative Analysis (Output of 1) and Interviews with the Industry Experts</td>
<td>PSASV Value Chain</td>
</tr>
<tr>
<td>3</td>
<td>To understand the competitive forces in the industry and the trends in competitive dynamics leading to strategic responses</td>
<td>IT industry 5 forces model from the literature has been taken as a base and expanded based on the questionnaire responses and interviews with the industry experts</td>
<td>5 Forces Model for PSASV</td>
</tr>
<tr>
<td>4</td>
<td>To study the value chains of select firms to understand the value proposition, value creation and value delivery of services</td>
<td>Detailed Case Study methodology with selected cases</td>
<td>Degree of alignment of the cases with the developed model</td>
</tr>
<tr>
<td>5</td>
<td>To develop a conceptual strategy framework for the PSASVs which help formulate and implement strategies for value enhancement</td>
<td>Composite Approach (Combination of above 4)</td>
<td>Conceptual Strategy Framework for PSASVs</td>
</tr>
</tbody>
</table>

Source: Creation by Author

The first research objective i.e. identifying the set of variables important for the performance of PSASVs is linked with phase I & II of the research framework. The outcome of this exercise is the list of variables and the degree of their impact on the firm’s performance. The second research objective (of creating the generic value chain) is linked to Phase IV of the research framework. The third research objective is linked to Phase III of the research framework and helps understand the competitive forces in the PSASV industry and the trends in competitive dynamics leading to the strategic responses. The fourth research objective is to study the value chain of various firms to understand the value propositions, value creation and value delivery of services. This also helps in validating the value chain through quantitative analysis, case study analysis and interviews with industry experts. The fifth research objective i.e. to define a conceptual strategy framework for the PSASVs involves a reflective process and analysis of the data collected during the phase I, II, III and IV. Thus, it is mapped accordingly.

Alternately, the flow in figure 2.3 indicates the steps followed for carrying out the research. This, essentially, again rolls into two high level activities, one to define the model, and two, to test it.
2.6 Research Design

A research design (figure 2.4) is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure (Sellitz et al., 1962). According to Kerlinger (1986) a research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or program of research. It includes an outline of what the investigator will do from writing the hypothesis and their operational implication to the final analysis of data.

Figure 2.4: Theory, reality and research design

Source: Rohit Kumar, 2011
The Figure 2.4 highlights the relationship between theory, reality and research design. As the research objectives are trying to address different problems, different methods were used to achieve them. The research designs of each research objective are discussed in detail.

2.6.1 The First research objective
To identify the set of variables which are important for the successful performance of PSASVs and to study their inter-relationship in service creation and delivery.

2.6.1.1 Introduction
In order to sustain resource transactions with their environment, organizations make strategic choices concerning alternative actions they will take to adapt to environmental forces (Child, 1997). Strategic management is an organizational practice for achieving adaptation. Strategic management has also been described as a systematic process for positioning an organization within its environment so that continued success is assured and so that it is able to deal with surprises (Ansoff, 1987). Strategic management thought positions that an organization engages in both intentional and unintentional formation of strategies that are synthesized into the actual strategy it enacts to reconcile internal capabilities with its external environment possibilities (Mintzberg & Waters, 1985). Organizations develop strategies to attain competitive advantage in their relationship to their environment relative to their competitors. The source of competitive advantage is an area of debate in the strategic management literature, but two streams of intellectual thoughts tend to dominate (Luke, Walston, & Plummer, 2003).

One steam of literature, sometimes referred to as the market structure view (MSV), focuses on external advantages primarily attained via favourable market positioning that increases the market power of an organization relative to its competitors. The second strategic management stream, sometimes referred to as the resource based view (RBV), focuses internally on all of the assets, capabilities, organizational processes, information, knowledge, and other capacities controlled by a firm that enables it in developing and implementing effective strategies.

MSV and RBV approaches to strategy suggest that environmental and organizational factors are salient in making strategic choices. PSASVs performance is affected by the organizational and environmental factors (Rangarajan and Tiwari, 2014) in the broad areas of

- Environment,
- Financials,
• People,
• Processes,
• Structure,
• Governance and Technology.

Further extensive literature reviews on these areas have been done to arrive at the explicit influencing factors affecting the PSASVs.

This research leverages the composite approach to definition of the environmental and organizational influence constructs in strategic management research by quantitatively examining loading of variables on these constructs and then the predominant qualitative approach to construct definition in the field. Variables operationalising Technology and Data Protection, Country / Region specific Local Issues, Structure and Governance (Alliances, Partnership, and Vendors), Social and Demographic Factors, Global Economic Conditions and Business Environment and Quality of Customers were used to capture the environmental influence construct based on a qualitative review of the literature. Variables representing Organization Structure, Financial consideration (Cost, Profitability), Skill Development, customization and development process, product process and innovations, and Pre-Sales Approach were used to capture the organizational influence construct.

Factor analytic methods quantitatively indicated that the alignment of variables with the constructs was supported - except for the variable of Pre Sales Approach. The results and their implications are discussed along with implications for future research in subsequent chapters. This research leverages quantitative methods to help define constructs to supplement the predominantly qualitative approach in most of the strategic management research.

Strategic management research tends to draw on qualitative approaches to operationalising constructs via literature reviews and generally accepted uses of certain variables to capture common constructs of interest. In a multi-year content analysis of strategic management scholarship, it was noted that strategic management, ‘has been characterized as placing less emphasis on construct measurement than other management subfields’ (Boyd, Gove, Hitt, 2005). This research concluded that more rigorous validation of strategic management constructs is needed. Suitable operationalization of constructs used in theoretical models is integral to research validity (Trochim, 2001). Sophisticated quantitative methods are widely used and reported in behavioural science research to validate that variables used to operationalise constructs actually capture the constructs (Cohen, Cohen, West & Aiken, 2003).
However strategic management research methods have been less rigorous and more oriented to qualitative versus quantitative approaches in this area. The environmental and organizational influence constructs are widely used in strategic management research (Ginter, Swayne, & Duncan, 2002). Organizations are engaged in a continuous process of strategic adaptation to external environmental forces in order to survive and thrive (Kast & Rosenzweig, 1985; Ginter, Swayne, & Duncan, 2002). Adaptation requires that organizations make strategic choices concerning initiatives they will undertake, using their internal organizational capabilities, to achieve alignment with their environment (Child, 1997; Barney, 1991). Which responses are selected and whether they can be successfully enacted by a particular organization depends on a number of factors specific to an organization and its environment (Kimberly & Evanisko, 1981; Hamel & Prahalad, 1994). Thus, both environmental and organizational influences are salient in making strategic choices.

This research investigates operationalization of the environmental and organisational influence constructs as an aid to better understanding the relative utility of quantitative and qualitative approaches in strategic management research. The research uses factor analytic methods to examine commonly used environmental and organizational variables from the literature to capture these constructs and thereby facilitate a comparison of quantitative and qualitative approaches to construct operationalization. The research proceeds by briefly reviewing the role of environmental and organizational influences in strategic adaptation of the framework.

2.6.1.2 Steps

**Step I: Identify the relevant variables from academic literature**

Although academic literature is full of strategic articles on Information Technology services in general, there is very little literature available on the packaged software services organizations.

So the literature review involved studying the journal articles in the area of IT services, packaged software services as available, analyst reports on the packaged software industry, national and international bodies dealing in the area, websites of the packaged software services vendors and various internet repositories.

Some of the key sources are listed below:
1. Relevant journals / articles on Strategic Management, IT Services and package application services
2. NASSCOM site and reports
3. Government websites (like IT ministry)
4. World Bank reports
5. IDG, Gartner reports
6. Websites of PSASVs like Infosys, Wipro, Accenture, IBM etc.
7. Websites of Package Product development firms like SAP, Oracle etc.
8. Available information over the web

Output of Step I was a set of environmental and organizational variables that formed the basis for the creation of the questionnaire to collect data for the quantitative analysis to arrive at the final variables for further treatment.

**Step II: Quantitative Analysis of the variables based on data**

Principal components and common factor analysis are related data reduction techniques commonly used to examine the interrelationship among continuous variables where it is assumed that observed co-variation between the variables is due to some underlying common trait or traits, designated as components or factor depending on the method. In the principal components method all observed variance is considered, whereas factor analysis focuses only on common variance in identifying underlying traits. In well-designed studies with adequate sample sizes, whether principal components or common factor analysis is used makes little practical difference in the results obtained and running multiple analyses varying methods for cross validation is recommended (Tipping and Bishop 1999). Sample sizes need to be in the range of five to ten cases per variable and at least 100 to 200 cases minimum are recommended (Dixon). Of more importance is the goal of the factor analytic method utilized. Exploratory factor analysis does not assume a particular set of factor and lets any pattern emerge from the data. Confirmatory factor analysis tests a formal hypothesis about the factors that are expected to underlie the data. In this study, sample size assumptions were met and both principal components and exploratory factor analysis were used for cross-validation as were multiple methods of identifying the number factors.

**Questionnaire and Data Collection**

An extensive and comprehensive questionnaire was constructed for data collection. It contained the questions regarding strategic decision making factors, internal factors and
external factors. The questionnaire included multiple questions involving open ended questions, closed ended questions, partial opened questions, scaled questions and ranking questions as indicated in the table 2.3. A Five point Likert scale has been used for responses with options of strongly agree, agree, neither agree nor disagree, disagree and strongly disagree.

**Table 2.3: Survey Question Types**

<table>
<thead>
<tr>
<th>Question Type</th>
<th>Uses</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| Open Ended (essay of short answer) | • Discover relevant issues  
• Obtain a full range of responses  
• Explore respondents views-in-depth | • Identifies issues most relevant to respondents  
• Generates new ideas about topic  
• Clarifies respondents position  
• Provides details and depth | • Requires more time, thoughts and communication skills to complete  
• Requires time consuming data entry  
• May gather incomplete or irrelevant data  
• Complicates data summary and analysis |
| Close Ended (multiple choice or yes/no) | • Ask many questions in a short time period  
• Assess learning or attitude when issues are clear  
• Assess knowledge or ability | • Fast and easy to complete  
• Enables automated data entry  
• Facilitates data analysis and summary of data | • Limits response option  
• May omit a preferred answer  
• Requires moderate knowledge of topic to write appropriate questions and responses  
• Lacks details and depth |
| Partial Open Ended (multiple choice with other options) | • Ask many questions in a short time period  
• Assess learning or attitude when issues are clear  
• Discover relevant issues | • Enables respondents to create their own response if choice do not represent their preferred response  
• Generates new ideas about topic  
• Fast and easy to complete | • Requires moderate knowledge of topic to write appropriate questions and responses  
• Lacks details and depth  
• Complicates data summary and analysis |
| Scaled | • Determine the degree of response, opinion or position | • Provides a more precise measure than yes/no or true/false items  
• Fast and easy to complete  
• Enables automated data entry | • Requires moderate knowledge of topic to write appropriate questions and responses  
• More difficult to answer  
• Limits number of response options  
• May omit a respondents preferred answer |
| Ranking | • Choose among various options  
• Determine the relative importance to respondents of various options | • Allows respondents to indicate the relative importance of choice  
• Enables automated data entry | • More difficult to answer  
• Limits number of response options  
• May omit a respondents preferred answer |

Source: Creation by Author

The data was collected through mailed questionnaire, personal interviews and questionnaire survey method.

**Sampling**

In order to pursue the study, a convenient random sampling technique has been adopted. For this study, a total of 200 respondents were selected for the study. These respondents belong to the strategic decision making team of various Foreign MNCs, top Indian giants of IT industry, SMEs and small vendors. These respondents were having direct involvement in the strategy formulation related to packaged application business of the organization.

Key points to note here are
1. The nature of the industry – It is extremely dynamic and keeps changing depending upon the customer as well as the product vendor actions
2. Least degree of willingness of the industry to support any such academic research initiatives, and
3. The nascent stage of research activity in this segment.

Under the given circumstances, simple random sampling under probabilistic sampling has been adopted.

Results and Discussion

Validity of the qualitative operationalization of the environmental and organizational constructs was empirically assessed using both principal components analysis and factor analysis to examine the association of the metric variables (i.e., Technology and Data Protection, Country / Region specific Local Issues, Structure and Governance (Alliances, Partnership, Vendors), Social and Demographic Factors, Global Economic Conditions and Business Environment and Quality of Customers, Organization Structure, Financial consideration (Cost, Profitability), Skill Development, customization and development process, product process and innovations, and Pre-Sales Approach) with these constructs. Key pints of the analysis are as follows.

a) Total Variance Explained – Independent and Dependent Variables: Factor Analysis and Principal Component Analysis method have been used to determine the variances. Eigenvalues associated with each linear factor before and after extraction and also after rotation has been observed. Before extraction, the SPSS has identified multiple linear factors within the data set. The Eigenvalues associated with each factor represents the variance explained by the particular linear component. The same is also represented in terms of the variance explained by one particular factor with respect to the total variance. Subsequently, the Eigenvalues of the factors for Rotation sums of squared loadings are observed. Rotation has the effect of optimizing the factor structure and one consequence is that the relative importance is equalized.

The same analysis is also then validated by the scree plot of the factor analysis. The scree plot graphs the Eigenvalue against the factor number. Factors are considered till the plot line is almost flat because each successive factor accounts for smaller amounts of the total variance after that.

The result of the rotated component matrix, which is a matrix of the factors loadings for each variable onto each factor, suggests the factors for analysis.
b) Correlation amongst Strategic Focus Attributes, Internal Factors and External Factors:
Correlation significance needs to be identified amongst independent and dependent variables. This is identified on the basis of the Pearson correlation coefficient at a significant confidence interval allowed as per the statistical standards.

c) Regression Analysis: Regression analysis returns the R, R² and adjusted R² values. The R value represents the degree of correlation. The R² and adjusted R² value indicates the goodness of fit of the regression model.

d) ANOVA table has been used to indicate if the regression model predicts the outcome variable significantly well. The value of F-statistics and level of significance conclude whether the model is correctly defined or not.

The Beta coefficient of correlation for each independent variable indicates the explanatory power of the variable in explaining the dependent variable.

This part of the research focuses on statistical analysis leveraged to arrive at the relevant dependent and independent variables. The primary set of variables used to prepare the questionnaire is obtained from literature review. As a further research topic, the output is run iteratively through case studies to arrive at the final set of variables.

Cronbach’s Alpha statistics indicates the reliability of the data. The computation of Cronbach’s alpha is based on the number of items on the survey and the ratio of the average inter-item covariance to the average item variance. Under the assumption that the item variances are all equal, this ratio simplifies to the average inter-item correlation. Acceptable range of Cronbach’s Alpha concludes that the variables used in the study are reliable.

Output of Step II is the list of variables for the quantitative analysis with the case studies.

**Step III: Validating the variables with the Case Studies**
The list of variables as an output of the step II is treated with the three cases iteratively in phases as below:

i. Determine and define the research questions: To validate the set of variables identified through literature review and quantitative analysis that are important for the successful performance of PSASVs

ii. Select the cases and collect data: Three companies, one each in large, medium and small PSASV industry segments have been selected for the detailed case study analysis. Questionnaire based data collection was done for each of the variables for all the three cases. That was also followed up with multiple rounds of detailed interviews with the representatives of the case study organizations.
iii. Evaluate and analyse the data: Running every identified variable iteratively through the three cases in terms of what the variables with their attributes mean for the case study organization and their significance.

2.6.2 The second research objective

To prepare the generic value chain of PSASV firms, and identify weak links in the current value chain of such PSASVs.

The PSASV world is complex and heterogeneous. The Value chain for PSASVs differ from normal software industry in the sense that both the nature of final markets (customer) and the primary supplier (product vendor) are the drivers of the value chain in case of PSASVs. Also, every node in the PSASV value chain has its own sub value chain making the overall value chain very complex.

This research will address the following points while examining the value chain for the PSASVs.

- The point of entry for PSASVs in the value chain (Product Vendor / Customer)
- Mapping of value chain elements
- Mapping sub value chains for each of the nodes / value chain elements
- Upstream and downstream activities for all the chain elements
- Identifying the organizational and environmental variables affecting the PSASV value chain elements
- Critical Success Factors in final markets (customer)
- How product vendors access final markets
- Benchmarking services efficiency
- Governance of value chains

2.6.2.1 Steps

Step I: Generic Value Chain Definition

Origin of the value chain thinking has been outlined in this step. That has been followed up with defining the Generic Value Chain (GVC) covering the basics of value chain, the simple and complex real life value chain, value chain vis-à-vis other related concepts, significance of the value chain analysis and different types of value chain.

Step II: Extracting the Service Industry value Chain
This section defines the service industry, value chain in the service industry, extending the smiley face value chain model to the services industry and commonalities and differences between the manufacturing and service value chains.

**Step III: Leveraging the IT value Chain**

This step outlines ICT value chain, IT value chain, software value chain, leveraging IT value chain to maximise returns, application of value chain thinking to IT management, IT and global value chains and significance of offshore in services value chain.

**Step IV: Mapping the value chain to PSASVs**

This includes application of the value chain concept to packaged software services industry, PSASV value chain elements including the upstream and downstream activities as well as the variables affecting the elements and PSASV value chain characteristics including the significance of the value chain analysis for PSASVs and types of PSASV value chain.

Data collection and analysis

Step I is based on the inputs from literature and industry experiences. Data sources for Step II are literature review and interviews with the industry experts. Step III is based on literature review. Step IV leveraged data received for quantitative analysis and interviews with industry experts.

**2.6.3 The third research objective**

To understand the competitive forces at work within the PSASV industry and the trends in competitive dynamics leading to strategic responses.
2.6.3.1 Approach / Steps

Five forces model has been leveraged as a tool for the structured and systematic analysis of market structure and competitive situation.

Step I: Leverage IT Industry Five Forces Model available in the literature

Marketline (www.marketline.com) industry profile (2013) analysed the five forces model for the global software & services industry. The key buyers were taken as businesses, individual consumers and governmental entities, and providers of hardware devices and software tools, as well as skilled employees as the key suppliers. This has been used as the base to understand the forces in the PSASV industry.

Step II: Questionnaire based Survey on forces in the PSASV industry

A questionnaire based survey was conducted with 200 respondents. The survey contained questions on the five forces and corresponding attributes and the respondents were asked to mark their response on a scale of zero to five (0 – 5).

Step III: Quantitative Analysis and interviews to arrive at the PSASV five forces model

A simple average of the 200 respondents has been taken to arrive at the scores for the various attributes of 5 forces and also the consolidated scores for each of the five forces. This was followed with interviews with industry experts to validate the scores. Five percent deviation was taken as the threshold to revisit the scores and in this iteration, outliers were ignored and scores recalculated.

2.6.4 The fourth research objective

To study the value chains of select PSASV firms to understand the value proposition, value creation and value delivery of services.

2.6.4.1 Introduction

The defined PSASV value chain as part of the objective 2 has been iteratively validated with three case studies to assess how they align with the PSASV value chain and how their value proposition, value creation and value delivery are supported by the value chain.
2.6.4.2 Approach / Steps

The overall research process comprises of two interlinked cycles:

Knowledge generation and Model creation: Knowledge is generated by formulating new ideas, models and hypotheses. PSASVs value chain model has been developed based on primary data. (Objective 2)

Generalization cycles: The generated model is then tested using PSASV case studies. This has been achieved through multiple interviews and discussions with the experts in the case study organizations.

The generalization cycle is responsible for:

Verifying the research results obtained from the knowledge generation cycle. i.e., Validating the PSASV value chain and

Determining the degree of general applicability of the knowledge generated

**Figure 2.5: Framework for researching dynamic strategy formulation and implementation**

Source: Rainer and Kazem, 1995
2.6.5 The fifth research objective
To develop a conceptual strategy framework for the PSASVs which will help formulate and implement strategies for value enhancement.

2.6.5.1 Introduction
PSASVs operate in a complex integrated environment with product vendors on one hand and customers on the other hand. The industry also witnesses players moving ahead with supporting partners and internal as well as external environmental factors impacting their performance. The conceptual strategy framework is aimed to be developed for the PSASVs to help formulate and implement strategies for value enhancement.

2.6.5.2 Approach / Steps
To study the phenomenon and achieve the fifth objective of the current study, Triangulation has been used. Many researchers have discussed complementing survey with field work to arrive at better results. The combination of methodologies in the study of the same phenomenon (Dentin, 1978) in order to arrive at a better understanding of a given setting or community without spending too much time in any one setting is called triangulation. The assumption underlying triangulation is that when a researcher uses two methods, the weakness of each method can be overcome by the other.

In addition to use a combination of methodologies (Qualitative literature review, Quantitative analysis, and Case study analysis) the following methods were used to re-validate the study findings:

Expert Opinion Interview: The findings of the study were re-validated by undertaking expert opinion interview. Here, in-depth interviews were conducted with experts in the field of packaged software services. Experts were defined as those individuals who have more than 10 years of managerial experience in the area of packaged software and occupy senior management positions in their respective fields of operation. The list of experts was gathered through different sources and contacts.

Reports and Publications: Secondary data from PSASV websites, analyst reports and journal publications also helped re-validate the findings.
2.7 Limitations of the research

1. Scope limited to PSASVs only: The research is limited to the package application service providers only. PSASV industry is a subset of the IT services industry. The value chain of the package software services industry is different from the custom software development industry. Hence, this research outcome may not be directly extrapolated to the whole of IT services industry.

2. No Hypothesis: Being a qualitative research, hypotheses have not been tested in this research. However, hypotheses or ‘theories’ can ‘emerge’ from the research data and findings as part of future scope of research.

3. Further validation needed for generalization of the research findings across industries: The research outcome of identified variables in the PSASV industry, forces playing in the industry, value chain for the industry and the strategic model for the industry need further validations towards any generalization for any other industry segment. This is because the research has been focused on the given industry segment and selected case studies.