Entrepreneurial Process: A Personalistic-Cognitive Platform Model

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Entrepreneurship theories and research deal with a variety of behavioural and non-behavioural processes and issues that explain the nature of entrepreneurship in different ways. The advances made in entrepreneurship research now centre on entrepreneurial cognitions, entrepreneurial personality, and motivation even though the other areas of research are not without significance, considering the importance of the field.

The personalistic-cognitive platform model proposed accounts for the composite dynamics of the entrepreneurial behaviour that focus on the behavioural dynamics of the entrepreneur. The superimposition of the behavioural processes on the economic/social attributes of the environment gives rise to a platform of personality and cognition that overarches itself to the generalization, prediction, and dynamics of entrepreneurship. The platform is constructed based on the ‘bricks and mortars’ of entrepreneurial syndrome, entrepreneurial motivational dynamics, environmental scanning, decisional processes, and cognitive mediation circumscribed in the entrepreneurial mental model.

Entrepreneurial syndrome is formed by the cluster of an array of entrepreneurial traits of venture significance. The syndrome gets manifested as a stable dynamic formation of personality that seeks new ventures and produces goods and services of economic value. Entrepreneurial motivational dynamics unravels the nature of entrepreneurial drive that has push and pull forces that direct the person to different economic realms. The performance motivation of the person is characterized by goal setting, expectancy, and self-efficacy motivation. Together they explain the motivational dynamics of entrepreneurial behaviour that aims to derive something of lasting value.

Scanning the environment enables the entrepreneur to distill the trends and the significant attributes that will lay the base of his entire business ventures. The scanned attributes are transformed in the person. As the decisional activity involves the identification of a specific alternative, the complexity that surrounds the selection of an alternative has special place in the entrepreneurial context. In the highly uncertain and novel situation, an entrepreneur is to take causal or effectual decisions.

The cognitive mediational activity exemplified in the entrepreneur’s mental model transforms the environmental complexity into usable forms of entrepreneurial outcomes. The cognitive strategies of differing natures help the entrepreneur in bringing about entrepreneurial ventures that are ultimately the products of entrepreneurial cognitions and related personal variables.
Entrepreneurship that appeared to be a simple enterprising or visionary activity of an innocuous entrepreneur has travelled a long path and reached a position in which it is understood to be a multi-conceptual and multi-faceted process (Baum, Locke and Smith, 2001). Economists, psychologists, sociologists, other social science researchers (Schuetz, 2005), and management thinkers have interpreted the underlying entities of entrepreneurship based on their theoretical and practical predilections. Considering the diverse perspectives on entrepreneurship, it can be found that there is no single accepted definition of entrepreneurship in the literature; instead we find contradictory definitions (Gartner, 1989), which are often framed to suit different purposes keeping the discipline in question.

In the conception of an economist, an entrepreneur is one who has set his target on profit maximization or reduced transaction cost in the exchange of goods or services (Otuteye and Sharma, 2004). In the management theory, entrepreneurs are first managers who combine the managerial and innovative resources to produce or create values to a targeted or segmented group of consumers (Bhattacharya, 2006). Extending the dynamic nature, entrepreneurship in the sociological perspective is seen as more a function of social forces and structures (Schuetz, 2005). The social contract envisages activities meant for common good and common utility.

Psychological approaches to entrepreneurship seek to identify behaviours and personality traits that are unique to successful entrepreneurs where traits are defined as temperamental characteristics that are stable over time (Reber, 1995).

These differing views of entrepreneurship relating the economic necessities of profit maximization that characterize the entrepreneurial venture, the innovative orientations of a manager, the contractual obligations involved in furthering the welfare of the society or the unique psychological processes of an entrepreneur, expose the dangers of interpreting and understanding entrepreneurship in the true perspective.

A proper understanding of entrepreneurship requires the consideration and understanding of all these views so as to have a better generalization and prediction. Shane and Venkataraman (2000) have differentiated between disequilibrium and equilibrium approaches used in researches. Disequilibrium draws upon unpredictability conditions and attributes of the environment and the person together which contribute towards the emergence of entrepreneurship. The emergence of entrepreneurship is thus dependent upon the tendency of certain individuals to respond to the cues provided by an economic, industrial, and social environment (Shane and Venkataraman, 2000). Entrepreneurship can thus be summed in an equation, \( E = f(P, E) \), that is, entrepreneurship is a function of the person and the environment. It explains the importance of initiating and developing entrepreneurial activity that starts with the “individual entrepreneur” who later becomes the centre of economic activity derived from the socio-economic environment and designed for the prevailing socio-economic environment. The black-box production approach of the neoclassical school, that deemphasized the individual (Eid, 2006), in a way threw open the significance and the uniqueness of an individual entrepreneur who confronts a myriad of environmental attributes. The neoclassical theory of the firm, in which entrepreneur is analogous to a fixed factor endowment, reflects the static and the passive role of the entrepreneur (Casson, 1985). On the contrary, entrepreneurship is explained to be a process dynamic activity that seeks to examine the intriguing origins and the conditions that stimulate the formation of entrepreneurship (Mahoney, Eisenhardt and Companys, 2002) and which is characterized by the robust design strategies (Hargadon and Yellowlees, 2001), followed by the entrepreneur and entrepreneurial cognitive search (Gavetti and Levinthall, 2000) that make it a creative and innovative activity. The invariable relation between cognition and action, which is substantiated in different settings (e.g., Thomas, Clark and Gioia, 1993), is taken to the entrepreneurial setting. Baron and Ward (2004) enumerates on the nature and patterns of entrepreneurial cognitions resulting in entrepreneurial outcomes.

Thus cognition and personality processes come in between the attributes presented by a complex environment and the challenges and confrontations of an innovative entrepreneur leading to outcomes. A mediational model of the cognitions and behaviours that successful entrepreneurs use in their venture strategies hold a better prospect for a unified and interaction approach to the study of entrepreneurship.

In the present paper, a Personalistic-Cognitive Platform Model of an entrepreneur, who becomes an entrepre-
A PERSONALISTIC-COGNITIVE PLATFORM MODEL: THE CONCEPTUAL BACKGROUND OF THE STUDY

Entrepreneurship being a complex and multidimensional phenomenon (Gartner, 1989), the explication of the construct requires the consideration of environmental opportunity realization which is made possible by the specific cognitive processes and the unique configuration of the personality structure that becomes functionally autonomous. The components of the model, as depicted in Figure 1, are derived from the integration among the personality processes, motivational dynamics, cognitive processes, decision-making modes, and the attributes of the environment of value creation.

The two contrasting views of entrepreneurship as a unique band of people solely powered by the individual processes with their own peculiarities and entrepreneurs as a by-product of a changing socio-economic environmental factors necessitate a position that blends both, which must be an amalgamation. This multiple variable model is to explain the process and dynamics of entrepreneurship by bringing out the complex relationships mediated by cognition and personality in the entrepreneurial activity. Enterprising activities are influenced by the founder’s personality and the characteristics of the environment (Manimala, 1996). Taking a broader perspective that characterizes entrepreneurship as the search for opportunities for value creation and exploitation in a changing environment (Butel and Watkins, 2004) and which emphasizes the generation and development of ideas (Faltin 2004) that are in the form of lasting value to the society, the general and specific mechanisms that underlie entrepreneurship are to be explored.

A Personalistic Cognitive Platform Model is laid for the emergence of entrepreneurship. A successful entrepreneur is consequent to the integration of the personality processes, cognitive processes, and motivational dynamics with the attributes of the environment (Zahra and Dess, 2001). Gartner (1985) has suggested a conceptual framework for describing the new venture creation of entrepreneurs. However, the value of the present approach rests on elevating the process-dynamic nature of entrepreneurship to a different realm wherein it delineates the individual-specific processes along with the environmental scanning. Stocks of information derived from the environment create mental models, which provide a framework for recognizing new information. And the entrepreneurial process is distinguished by the ability to combine existing concepts and information into new ideas (Yong, Murphy and Depaul, 2006). Wood and Bandura (1989) explain that individuals develop their knowledge and skills on the basis of information they receive through interactions with others in the environment. Moreover, individuals model their behaviour based on cognitive and personal factors along with what they have seen demonstrated in the environment (Corbett and Hmieleski, 2005). The individual-specific delineation approach lays bare the platform of interaction and integration of personality and motivational

Figure 1: Personalistic-Cognitive Platform Model
processes, decision-making activity, and the mediational cognitive processes that give rise to the emergence of entrepreneurship. Mitchell, et.al. (2004), demonstrates the overlap that exists between the domains of cognitive psychology and entrepreneurial cognition in that the distinctive and the inclusive realms point to the independent and interactive outcomes of entrepreneurial processes. The inclusive domains of entrepreneurial processes may be extended by intersecting the cognitive processes and personality processes that further identify specific motivational activity and decisional processes which are the bricks and mortars of the platform of entrepreneurship (Zahra and Dess, 2001).

Cognitive psychology helps explain the mental processes that occur within individuals in their innovative search of the environment for opportunity realization (Mitchell, 2002). Baron and Ward (2004) suggest that it is the complex and adaptive mental frameworks of entrepreneurs that enable them to “think outside the box.” The exogenous and endogenous implications of the entrepreneurial processes may be noted here.

Research examining entrepreneurial cognition is scant (Corbett and Hmieleski, 2005) because of the non-application of cognitive processes and constructs in the development of entrepreneurship. However, a burgeoning interest can be found in the researches that examine the theoretical and measurement process involving entrepreneurial cognitions (Baron and Ward, 2004). An entrepreneurship model has to take into account the individual processes and dynamics along with the environmental attributes, which means the integration of the endogenous and exogenous forces. Cognitive research unravels the spheres of cognitive processing of entrepreneurs by investigating the mental transactions that relate to the ability to identify and exploit entrepreneurial opportunities (Corbett and Hmieleski, 2005). The cognitive approach of an entrepreneur can be concerned with the preferred way of gathering, processing, and evaluating information so as to produce useful cognitions in the economic activity (Allinson, Chell and Hayes, 2000).

In the mediational process of cognition, successful entrepreneurs think frequently about entrepreneurial activities, apply venture-specific tacit and explicit knowledge, and adapt strategies and goals to manage problems and opportunities (Baum, 2004). The mediational activity is elaborated by the use of dynamic cognitive constructs (Bryant, 2004) and cognitive processes that enable business opportunity recognition (Baron, 2004) and is further influenced by a variety of interrelated micro and macro domains (Baum, Locke and Smith, 2001).

Social cognitive theory explains human functioning in terms of a bi-directional triadic relationship in which behaviour, cognition, other personal processes, and the environment— all operate as interacting determinants of each other (Corbett and Hmieleski, 2005). Individual cognitive stimulate upside growth (Wright, et.al., 2000) that can be moderated by the relationship between personality and entrepreneurial outcomes (Zhao and Seibert, 2006).

Significant progress in entrepreneurial research is made through a cognitive shift from a managerial to an entrepreneurial mindset, a mindset characterized by a unique personality (Luczkiew, 2004). Entrepreneurial cognition has received growing attention from researchers (Baron and Ward, 2004) and practitioners because cognitive processes enable entrepreneurs to identify, recognize, discover promising opportunities, and interpreting stimuli as signaling potential opportunities (Gregoire, Barr and Shepherd, 2006).

Mind as an information-processing machine forms concepts and churns out ideas and combine and recombine ideas. In these processes of idea transformations of an entrepreneurial nature, the cognitive apparatus of the mind employs different strategies to produce useful outputs.

The most accepted definition of personality is perhaps the one that explains the unique constellation of traits. The new conceptualization of traits as independent variables or dynamic entities (McCrae, 2001) result in the identification of significant personality constructs that have cross-situational consistency and variability. Consistent cross-situational differences between individuals reflect dispositions whereas consistent situational differences within individuals reflect signatures (Fournier, Moskowitz and Zuroff, 2008). Thus between individual differences and within individual differences can be explained by an interaction scheme of dispositional influences and situational influences.

The nature of traits in individuals is differentiated into source and surface traits in the theory of Cattell as stated
by Hall, Lindzey and Campbell (1998). These refer to two distinct patterns of behaviour in which the former denotes deeper and stable underlying tendencies expressed as an identifiable trait while the latter means behaviour samples that go together but which are not deep and enduring. Trait constellations being a grouping of both surface and source traits of stable dispositions, consistent expression of certain traits in similar and dissimilar situations can contribute to the formation of a distinct personality system. The cluster of traits thus formed with reference to a particular entrepreneurial situation, develops into a syndrome, known as an entrepreneurial syndrome. In practice, it means that the differences among individuals at the group level and within individual at the personality level merge with the situational features contributing to the formation of entrepreneurial syndrome. The emergence of entrepreneurial syndrome thus revolves around source traits and surface traits acting in concert with the situational distinctiveness.

The motivational dynamics of entrepreneurs are found to be different. The theory of work motivation draws upon the contents and processes involved in the directive and energized behaviour. The content theory of motivation exerts a categorical effect while the process theories exemplify the relations and sequential nature of motivation. Entrepreneurial motivational dynamics can be understood using the contents and the processes approach.

Environmental scanning as a sub-process of the personality-cognitive platform model provides inputs and stimuli to the cognitive apparatus. The scanning of the environment is further controlled by its attributes and economic imperatives and values. Attributes of the environment and personal nature further influence the nature of the entrepreneurial outcomes.

Decision-making of an entrepreneur is of utmost significance because of the fact that he is operating in a particularly uncertain context, and secondly, because of the risk-taking behaviour, that has to emanate from the former. Risk-taking behaviour which is otherwise a normal part of the managerial decision process is compounded in the entrepreneurial context by the uncertain environmental forces requiring greater personal involvement.

Researchers have made different attempts to integrate the entrepreneurial research to sustain the value of theory and research (Shane and Venkataraman, 2000) wherein the explanation of personality structure and cognitive processes are to direct the entrepreneur towards successful outcomes. There is a need for a framework that defines the domain of the field, its building blocks and variables of interest (Zahra and Dess, 2001), in a personalistic-cognitive platform. This framework must offer to provide a unified individualistic explanation that encompasses cognitive processes (Wright, et.al., 2000) and personality structure (Gartner, 1985; Branstetter, 1997).

Thus there exists a strong case for the examination of the significant cognitions and personality processes that are operative on the interrelational platform of entrepreneurial processes enacted in response to the contingent variables of the environment. A comprehensive explanation of the entrepreneurial processes requires a model that resolves all the outstanding problems in the area of entrepreneurship that specifically address the issues of individual processes and dynamics in relation to the environmental attributes. The Personalistic-Cognitive Platform Model together with the sub-processes of entrepreneurial syndrome, entrepreneurial motivational activity, environmental scanning, decisional processes, and mediational activity explain in greater clarity the nature of the emergence of entrepreneurship.

Major Processes: Entrepreneurial Syndrome

Is an entrepreneur born or made? The Personalistic Cognitive Platform Model suggests that entrepreneurial activity is an interactive outcome of entrepreneurial syndrome and the motivational processes superimposed on a scanned environmental context that leads to a decisional process cognitively mediated in the creation of a new venture. The unique blend or pattern of traits of an entrepreneur gives rise to what can be called an ‘entrepreneurial syndrome,’ a cluster of entrepreneurial traits that are activated in the context of a specific pattern of environmental contingencies. Figure 2 indicates this trait constellation representing an entrepreneur. While the entrepreneurial syndrome clearly differentiates an entrepreneur from a non-entrepreneur, the trait constellations take different patterns. For example, locus of control may be the predominant trait among serial entrepreneurs or habitual entrepreneurs, but
The unique constellation of traits in interaction with the environment determines the behavioural consistency. Trait clusters in interaction with the environment determine the behavioural consistency. The prevailing aspect of the emergence of entrepreneurship due to the psychological processes of a person is the personal disposition (McClelland, 1965) along with the consistency of behaviour patterns shown by the person across different situations. Dispositions are viewed as tendencies to respond to situations or classes of situations in a particular and pre-determined manner (House, Shane and Herold, 1996). Dispositions vary from person to person, which again can be used to differentiate between entrepreneurs and non-entrepreneurs. Dispositions are deeper trait organizations, which mean that listed or numbered traits (manifested traits) of entrepreneurs pertain to dispositional trait dynamics. Researchers are currently paying greater attention to individual differences and there is every indication that this will continue to be the case for the foreseeable future (Mitchell and Daniels, 2003). An impressive array of traits and personality processes can be depicted as correlates of entrepreneurship (Nair and Pandey, 2006). And so, traits are important predictors of venture growth. But, the all-important process that influences the emergence and success of entrepreneurship is the self-determination of a person. The proactive nature of human beings and the tendency to be positively engaged as a function of the social conditions in which they develop and function (Ryan and Deci, 2000) make an entrepreneur self-determined. Research on the self-determination model of intrinsic motivation provides support for the relevance of need for autonomy and competence (Kuvaas, 2006) in the personal endeavour of a person. A state of low self-determination means that the individual has no future vision and is willing to settle with the ordinary and to be content with the stereotypical work behaviour. Self-determination has the nature of setting and targeting the mind on a particular outcome, which the person hopes to attain by the instrumentality of his will.

Locus of control, a generalized expectancy that pertains to the perception of causal relationships between behaviours and environmental contingencies, determines the entrepreneurial behaviour. These generalized expectancies in relation to the contingencies or outcomes can be either external or internal. Persons who believe that they can do little to change the nature of their behaviour/outcomes are said to hold generalized expectancies for external control. On the other hand, if individuals believe that their behaviours reflect their efforts, personal characteristics, and actions, they are having generalized expectancies of internal control (Lefcourt, 2000). Locus of control is positively related to favourable work outcomes and greater work motivation (Ng, Sorensen and Eby, 2006). Further, external factors such as providing choice about aspects of task engagement tend to enhance feelings of autonomy, prompt a shift in perceived locus of control from external to internal, and increase intrinsic motivation (Gagne and Deci, 2005).

Achievement need, a dispositional trait, is inclined towards task-oriented, challenging, realistic, and standard form of behaviour that has some standard of excellence. Individuals with high need for achievement and low need for achievement behave differently in that high need directs them to better and greater accomplishments. Entrepreneurs and non-entrepreneurs can be differentiated on achievement components like the readiness to face uncertainty, calculating risk, undertaking personal responsibility, and solving problems (Sagie, 1999).

Dissatisfaction with the existing life situation of a person can be said to be a precipitating factor in the making of an entrepreneur. A pervasive dissatisfaction as to
the existing aspects like input/output relations, career choice, freedom of expression, and the insufficiency felt can be stimulants to entrepreneurship (Brockhaus, 1982).

Technical know-how of the person further influences the personal disposition (Miller, Fern and Cardinal, 2007). The education and training of the person, special expertise, and keen interest in an area like product design, marketing or attracting customers can be clear inputs in the transformation of a routine worker or a paid employee to a boss.

Innovativeness as a personality trait is shared by all the successful entrepreneurs. Innovation may be differentiated into product innovation, process innovation, and market innovation (Johne, 1999). Empirical analysis reveals that there are four major types of innovation: operational innovation, market/marketing innovation, organizational innovation, and boundary management innovation (dealing with external agencies including government, financial institutions, general public and others) (Manimala, 1999). Product and market innovations focus on identifying new business opportunities following which the emergence of an entrepreneur can be seen.

The correlates of entrepreneurship thus identified including locus of control and innovativeness (Nair and Pandey, 2006), need for independence (Mitchell, 2004), readiness to face uncertainty, calculated risk, undertaking personal responsibility and solving problems (Sagie, 1999), and personal efficiency and coping ability (Chawala and Butare, 2005) to create something new, moulds an entrepreneur. Proactive personality, extroversion, (Major, et.al, 2006), openness to experience (Zhao, Seibert and Hills, 2005 and Major, Turner and Fletcher, 2006), risk propensity (Caird, 1991), tolerance towards ambiguity (Lumpkin and Ergodan, 2004), self-efficacy (Judge, et.al, 1999) and problem-solving capability (Manimala, 1996) constitute an array of processes that tend the individual to new paths of business.

The pattern of cluster of traits and the related personality processes in constant exchange with the economic environment account for the observable entrepreneurial syndrome. It is the pattern and the collective organization of a systematic group of traits and consistent behaviours that give rise to this syndrome that manifests itself in a broad spectrum of entrepreneurial activity, guided by goal-setting.

Entrepreneurial syndrome, with its in-basket pattern of traits, comes to prevail over the traditional form of business activity when the individual, with his distinctive patterns of motivational and personality dynamics, establishes venturing relationship and encounter the scanned environment. A hyper-stimulating environment gets integrated with the cluster of stable personal dispositions leading to the emergence of entrepreneurial syndrome, marked by multitasks and innovative ventures in different areas.

The hyper-stimulating environment of extensiveness and intensiveness is marked by the predominance of economic and innovative attributes, which are a necessary precondition for the emergence of entrepreneurial syndrome. Environmental scanning disentangles or re-centres the environment so as to provide the entrepreneur with new green-fields and activity realms. The significance and the importance of the environmental set-up can be readily understood if we examine the context in which new business ventures are conceived. Individuals with distinctive characteristics are attracted to entrepreneurial situations and the cluster of compatible traits in individuals enables them to navigate the challenges of entrepreneurial contexts (Pendergast, 2006).

Entrepreneurial Motivational Dynamics

Motivation, which generally implies forward movement of a person in an effort to get some valued outcome that has some relation to either his physiological or psychological needs of lower and higher order, is an internal hypothetical construct. According to Mitchell and Daniels (2003), four things are usually mentioned to explain this specific behaviour: motivation is centred on issues, people, tasks and so on; motivation leads to effort; motivation produces persistence (Frese, et.al, 1996); and motivation results in task strategies to realize the goal. The complexity of this construct means multiple processes and multiple behaviours that are activated in response to exogenous or endogenous factors. The specific motivational processes set apart an entrepreneur from a non-entrepreneur in terms of the riveting direction and goal-oriented activity.

The characteristics of entrepreneurs or the entrepreneurial syndrome set apart an entrepreneur from a non-entrepreneur. They are definitely not the same for an entrepreneur and a non-entrepreneur. While acknowl-
edging that extreme economic inducements or impediments will significantly affect entrepreneurial activity, which points to the inherent and acquired intricacy of motivation, what is required is to explain the motivational dynamics of entrepreneurs in general ways, allowing for exception.

The two major groups of theories of work motivation have direct and immediate relevance in the explanation of entrepreneurship. The content theories suggest the list of factors that motivate the person in a discrete but methodical manner. Entrepreneurship literature these days has very little to say about motives (Manimala, 1999). Discovering the factors that motivate the individual to embark on an entrepreneurial activity becomes important in stimulating entrepreneurship (Mitchell, 2004). Entrepreneurial motivational activity is not a simple need-deficiency goal-directed behaviour. This specific form of motivational activity is overlaid by a host of related processes that have direct relation to a venturing business endeavour. The need deficiency felt is dependent on the existing work situations, which have more of job dissatisfiers and less of job satisfiers. Herzberg used these terms to explain work motivation. And, the would-be entrepreneur confronts an environment of more job dissatisfiers and less of job satisfiers. The net effect of such a situation is dissatisfied and demotivated worker. The need deficiency being an aversive motivational state, an would-be entrepreneur is driven by the released hidden energy to appropriate goals. In other words, when ‘the push’ aspect of motivation is overwhelming in the individual worker and ‘the pull’ aspects like the incentives or the prospect of incentives are compelling, the entrepreneurial activity germinates. Manimala (1999) has identified motives like the need for self-actualization, status motive, affiliation motive, enjoyable motive, and deontic motive that categorically move the individual to goals. It means that the push forces represent the internal mechanisms of arousal like dissatisfaction or need for exploration and the pull factors are embedded in a highly enticing environment (eg., special economic zones).

In the process theory perspective, three central theories of performance motivation are goal-setting, expectancy, and self-efficacy motivation (Judge and Illies, 2002), and together they contribute to enhanced ventures. Figure 3 explains the motivational dynamics, and accordingly, the motivation to innovate depends on a sequence of processes.

Expectancy model postulates the perceived instrumentality of effort or performance and reward for the outcome, which means the perceived linkage between effort and a valued outcome. Judgments of instrumentality mediate changes in performance (Wood, Atkins and Bright, 1999).

According to Locke’s theory, goals provide a directional nature to people’s behaviour and guide their thoughts and actions to one outcome rather than another to satisfy their emotions and desires (Luthans, 1995). Goal-directed behaviours are essentially grounded at the combinatorial function of individual tendencies, economic interests, value creation, and the feasibility of goal

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**Figure 3: Motivational Process**

![](image)
realization indicated by the environment. Goal-setting has a positive effect on actual performance (Mossholder, 1980). High learning goal-orientation and the perception of environmental features as enablers rather than barriers significantly enhance the motivation to engage in performance (Klein, Noe and Wang, 2006). The goal selected in accordance with the entrepreneurial spirit and the market conditions makes it a venturesome activity which has also the elements of risk-taking behaviour. Expectation of the goal achievement provides the entrepreneur with confidence and persistence. Intrinsic and extrinsic decision factors are positively related to subsequent satisfaction and commitment. More importantly, intrinsic motivation is not externally derived whereas external rewards undermine intrinsic motivation for tasks of high interest and/or low structure (Daniel and Esser, 1980). Entrepreneurial core competency as expressed in the committed goal-directed activity further underlines the importance of performance motivation in entrepreneurship. The core process of goal-setting involves developing a full goal commitment to the entrepreneurial task (Oettingen and Gollwitzer, 2001), which substantiates the fact that personal goals and self-efficacy influence performance (Vancouver, Thompson and Williams, 2001) of an entrepreneurial nature.

Self-efficacy as a motivational ingredient implies the expectation or the generalized belief that people have about their capabilities to carry out an action. It is also the belief that by one’s action, a desired outcome can be brought about (Hall, Lindzey and Campbell, 1998). Bandura (1989) distinguishes between an efficacy expectation and an outcome expectation, the former implying the entrepreneur’s own belief in a successful enactment of behaviours leading to the generation of outcomes and the latter implying the belief that a particular behaviour will lead to an outcome. Self-efficacy thus is composed of a perceived contingent relation and an enactive mastery in a situation of choice. Outcome expectation, more aligned with the expectancy theory of work motivation implies the belief of a person that a particular behaviour will lead to a distinct outcome. An efficacy expectation points to the capability belief (or effort-performance) that necessary behaviour can be enacted in an entrepreneurial context. Self-efficacy mediates the development of entrepreneurial motivation or more specifically the goal-directed activity of innovation (Zhao, Seibert and Hills, 2005). It has been substantiated that perceived self-efficacy and personal goals enhance motivation and performance attainments (Bandura and Locke, 2003).

**Environmental Scanning**

The individual entrepreneur in his scanning capacity assesses the characteristic nature of varied environmental attributes. Environmental scanning, in effect, holds the essence of the successful ventures (Sawyerr, Ebrahim and Thibodeaux, 2000). The environmental attributes are evaluated in relation to the form of the entrepreneurial syndrome and the individual motivational processes. The attributes themselves have a characteristic pattern which has implications for entrepreneurship. On the other hand, the motivational dynamics identifies and picks up the attributes that have motivational salience and centrality in the scheme of work behaviour. Similarly, the form of entrepreneurial syndrome gives meaning and interpretation to the attributes of the environment in specified behavioural patterns. The scanning of the environmental attributes is further mediated by the processes of personality variables (Pendergast, 2006). The entrepreneur has to ‘see’ the external environment and challenges as threats/opportunities that can be converted into success factors by choosing a field where he has the expertise and capability to read the trends of the demography, geography, and cultural factors (Vinturella, 2004).

The environment constitutes the canvas of the entrepreneur, wherein he can design and implement a plan of action based on the scanning. Macro environment refers to the wider area of scanning—the demographic environment, socio-cultural environment, technological environment (Kotler and Keller, 2005) and physical environment (Zikmund and Amico, 2001). The micro environment forms a segment of the macro environment, usually a niche, which keeps a certain distinct characteristics apart from the macro characteristics and considerations. Entrepreneurship, in its true sense, involves identification of opportunities within the economic system (Swapna and Kumar, 2005).

Physical environmental scanning identifies and isolates pertinent features that are directly related to the innovative activities. Demographic environment becomes the subject of scanning in terms of size, age, and numeric distribution of people, educational levels, household
patterns, colony living, and occupational levels. Products and services may be developed based on the different aspects of the demographic environment. Socio-cultural environmental attributes are expressed in the basic styles and patterns of living of members which are moulded by the shared fundamental and cardinal values and beliefs that define life in general and specific terms. Dominant and weak cultures may be identified in any segment of the market, which gives different definitions of life based on the different occupations and perceptions. The unique business ventures thus conceived by an entrepreneur are highly symptomatic of the cultural themes and ideals. The cultural ingredients and the patterns lead the entrepreneur to specific forms of business activity. Not only entrepreneurial activity and outcomes directly stem from the cultural underpinnings but also a synergy effected following cultural manifestations interpreted in an economic context springs up novel forms. The features of the socio-cultural context seen in the economic and innovative patterns form the ground of any prosperous activity. The inputs received from the socio-cultural context get processed in the “mindset” of the entrepreneur which leads to outputs of varied nature. The seeds of entrepreneurship consist of the freedom and informed discipline that characterize market economies (Clark and Lee, 2006).

Successful entrepreneurship excels in perceiving and opening up and exploiting new technological and market opportunities (Nystrom, 1993). In the divergent thinking (Ames and Runco, 2005) process of an entrepreneur, the market state is to be further ascertained with respect to factors like market growth, market opportunities, and the strategic options that are available to a marketer. In the marketing concept, the primary emphasis is on consumer orientation by which is meant the belief that the consumer be the centre of all the organization’s thinking and activation (Baker, 1998). Marketing orientation, that attempts to create customer value in order to attract customers (Jobber, 2001) is to be a higher activity of an entrepreneur whose entrepreneurial motivation may extend to building up business as a long-term phenomenon (Olomi, Nilson and Jaensson, 2004).

**The Decisional Processes**

Decision-making in an entrepreneurial context does not proceed in accordance with the rational considerations that usually characterize the mathematical and logical decision-making. Since the entrepreneurial decisions usually defy the established conventions in many instances, it would be stretching too far if we equate the decision-making within the logic of a mathematical model. Entrepreneurial decisions are conceived out-of-the-track as against the within-the-track mode of the non-entrepreneur. In many situations of innovation, as stated, the nature of the problem may not be compatible with mathematical analysis (Solso, 2002). Just because of the overriding subjective and uncertain factors that come into the problem at hand, the larger area of uncertainty may tend to make the decision-making activity a slow and intuitive-based process, where the investment of the unconscious and/or subliminal process strikes a significant contribution due to the re-listening of the research material that takes place as a largely unconscious projection of individual’s inner worlds (Roberts, 1997).

In intuitive decision-making, the weight of the experiences, know-how, the motivational processes, and personal dispositions prime the decision making process. Unconscious information processing in the form of implicit perception, implicit learning, and implicit memory, structurally separated from consciousness, (David, and Szentagotai, 2006) provide input to the intuitive decision making which does not rely on rationality. Intuitive decision maker is influenced unconsciously by past knowledge, training, and background (Terry and Franklin, 2003). Intuitions often spring to mind with subjective ease and the subjective ease leads people to hold their intuitions with high confidence (Simmons and Nelson, 2006).

Moreover, studying cognitions leads to a better understanding of decisions (Axelord, 1976). Sarasvathy (2001) has differentiated between causal and effectual decision-making that also explains the theory of effectuation processes in business. Accordingly, causation processes go by a particular effect as given and focus on identifying and selecting between means to create that effect. On the other hand, effectuation processes go by a set of means as given and identifies the possible effects that can be created with that set of given means. Causation and effectuation are integral to human reasoning, occurring simultaneously, overlapping and intertwining over many different contexts of decisions and actions (Sarasvathy, 2001).

Figures 4 A, B, and C detail the causative, effectual, and the combined modes of entrepreneurial decision-mak-
According to Figure 4A, causative decisional process begins with the entrepreneur identifying all the possible alternatives/means following the problem generation that requires a decision. This is followed by evaluation of alternatives/means, and selection of an alternative/means, which results in a decisional outcome.

In the effectual mode (Figure 4B), the given alternatives/means are searched or analysed for maximization of outcomes or to increase the effectiveness of decisions. Evaluation of possible effects implies relating the available means to different possible effects. In the subsequent stage, a particular effectual outcome is decided based on the means/alternatives.

Figure 4C shows the combined mode of the entrepreneurial decision-making. In the generalized decision frame of an entrepreneur (a decision frame is one that includes the conceptualization of the acts, possible outcomes contingencies related with a particular choice (Solso, 2001) or the internal processes of the decision-maker and the external encompassing variables surrounding the decisional processes), means/effects are controlled by factors of risk, uncertainty, and individual processes. Distinctions between risk and uncertainty have led researchers to conclude that both “risky known distribution” and “uncertain or unknown distribution” are preferred by humans in different situations. Entrepreneurs by their own distinctiveness may prefer the latter because of their tolerance for ambiguity (Sarasvathy, 2001). It is here that the specific individual processes encompassing the intuitive/unconscious inputs, is added to the decisional process. Intuitions often spring to mind with subjective ease and subjective ease enables people to have greater confidence in the intuitions (Simmons and Nelson, 2006). Moreover, unconscious thinkers make the best decisions (Dijksterhuis, 2004).

The evaluation of the alternatives in causation or effectuation involves a big challenge for the person, considering the extraneous variables that affect the attractiveness of each identified alternative. Each alternative has to be weighed against relevant criteria to decide upon the practical side of the plan. The entrepreneur based on other considerations like exercise of cognitions and environmental attributes may alternate between means and effects before arriving at a specific mode of decision making.

**Mediational Realm: Significance of the Mental Model**

The mediation of the cognitive processes (Eid, 2006),
which is made possible by the scanned environmental inputs, is effected through the mental models that accentuates and enhances the entrepreneur’s behaviour in relation to the other individual-specific processes and the environmental attributes. Entrepreneurs are on an unceasing path of idea generation and refinement (Manimala, 1992a). It has been shown that entrepreneurship can be predicted from ideation and divergent thinking (Ames and Runco, 2005). High need for cognition, as a stable process implies the tendencies to engage in more extensive causal processing and explanatory thinking (Lassiter, Briggs and Slaw, 1991; Skowronski and Crawford, 1998). The need for cognition as a differentiated process directs the individual to more exploratory and opportunity realizations. The motivated thoughts of enjoyment streams (Skowronski and Crawford, 1998) facilitates opportunity identification, judgments, and decisions pertaining to the coordination of resources in order to exploit those opportunities for personal gain (Otuteye and Sharma, 2004).

Cognitive psychology has been founded on a model of the mind as an information processing machine (Wilson, 1996) which means that we are in a position to harvest cognition as stable, internally represented, information-processed conceptions of the world (Antaki, 2006). The cognitive diversity in the strategic decision processes (Miller, Burke and Glick, 1998) centre around the implications of the strategic choice model of entrepreneurship. The arguments put forward to substantiate the process of human cognitive system in its divergent and convergent expressions of information processing differ as to the use of symbols as a representation of knowledge and the processing of symbols and their respective constituents (Kelly, 2003). Psychologists define a representation as an encoding of information in memory, which an individual can create, retain, and access (Smith and Queller, 2001) in response to contextual effects. The human cognitive system also uses distributed representation of knowledge and the processing of the same in a complex and meaningful way (Kelly, 2003). The distributed and symbolic representation of knowledge act as a catalyst for enhanced entrepreneurial activity. Besides the distributed representations, the three other representations are associative networks, schema, and exemplars (Smith and Queller, 2001).

In the definition of mental model as the knowledge domain (Ashcraft, 1998), the basic notion of information processing is that one must trace the progression of information through the cognitive system from stimuli to responses (Massaro, 1993). According to Kyllonen and Christal (1990), cognitive processing system retrieves information from long-term memories of procedural and declarative knowledge into working memory systems, where it is modeled and a response is generated (Drasgow, 2003). Memory-based structures drive selection by processing salient, surprising, and/or correlated information contained within and across stimulus dimensions (Melara and Algom, 2003). Information foraging theory assumes that people, when possible, will modify their strategies or the structure of the environment to maximize their rate of gaining valuable information (Pirolli and Card, 1999). The entrepreneur thus uses the contents in the working memory in the greater deployment of cognitive strategies identified in the diagram of the mental model of an entrepreneurial situation. The distinctive aspect about the mental model is not the direct application of reasoning rules based on logic but the creation of the ‘models’ derived from say, entrepreneurial circumstances (Chater, Heit and Oaksford, 2005).

The constructivist view of human mind disentangles a construction zone, more appropriately an entrepreneurial arena where integration of what is presented and what they already know take place as to generate outcomes (Petkova, 2004; Baron, 2004). Construction, which involves cognitive processing aimed at sense-making, is characterized by the theory of assimilative learning and the theory of generative learning (Mayer, 2003). In this connective form of learning, the learner connects what is presented with what the learner already knows. The entrepreneurial activity that ensues is based on the recognized elements in the context of environmental attributes and the available script used. Information processing or taking in of environmental attributes drive discovery via the cognitive phenomena of representation restructuring and idea recombination (Yong, Murphy and Depaul, 2006). According to Galunic and Rodan (1998), such recombination in the firm can be either a synthesis-based recombination or a reconfiguration-based recombination.

The scripts are formed by the specific cognitive processes that revolve around the use of mental or cognitive representations of knowledge. Successful entrepreneurs can be differentiated based on the me-
diational cognitive processings (Baum, 2004) of script, which are already present in the entrepreneur and the new ones are unceasingly generated by integrating the environmental features.

The process of reasoning involves the use of information to draw a conclusion and to make a decision. Reasonings of different forms are explained by Aschcraft (1998). The goal of syllogistic reasoning is to understand how different kinds of premises can be combined to yield logically true conclusions. Conditional reasoning enunciates the proof-based, stated relationships between/among informational stimuli. The use of algorithm, a specific rule or solution procedure, ensures a correct answer in the complex framework of divergent information of entrepreneurial nature. Heuristics provide shortcuts to solutions whereas in analogy, solutions are located by drawing relationships between/among informational stimuli. The heuristic value of perspectives ranging from reflective to synthesized constructions of meaning further elaborate the relevance of the same in guiding an entrepreneur’s behaviour (Fenwick, 2000). Heuristics, biases, and the role of prior knowledge can be the essential elements of the entrepreneurial process (Yong, Murphy and Depaul, 2006). Deductive and inductive reasoning could be differentiated (Solso, 2001) to make available to the entrepreneur the benefits of generalizations and specifications. In deductive reasoning, the conclusions could be proved valid through a process of deductive logic in that if the premise of a syllogism is true and the form correct, then the conclusion of an argument is valid. On the other hand, in inductive reasoning, considerations other than the structural form of an argument like common sense, pragmatism, and already present knowledge force a conclusion. Probability estimation is yet another way of weighing and evaluating informational components.

Egon Brunswick argued that psychological processes are adapted to environmental properties, wherein the method of representative design involves randomly sampling the stimuli from the environment or creating stimuli from the environment or creating stimuli in which environmental properties are preserved (Dhami, Hertwig and Hoffrage, 2004). Representative design for entrepreneurial action, following cognitive embeddedness form the basis of knowledge structures and innovation. As knowledge is generated and embedded in the invisible cognitive world (Richter, 1998) of the entrepreneur, those environmental properties or stimuli that have the quality of innovativeness lead to the formation of knowledge structure. In order to generate entrepreneurial outcomes, the logical and the pragmatic executive must guide the construction of mental models (Falmagne, 1994) or forms of mental representations of knowledge streams. At a cognitive level, people can apply distinct sets of production rules simultaneously for executing the procedures of multiple tasks (Meyer and Kiers, 1997) for varying entrepreneurial situations.

AN ENTREPRENEUR’S MENTAL MODEL

Having examined the components of a mental model that go into the mediational processes, it is logical to examine further the nature of an entrepreneur’s mental model. Each mental model represents a possibility constructed from perception, imagination, and comprehension (Mc Daniel, 2003) and they provide a unified account of deductive, probabilistic, and modal reasoning (Johnson-Laird and Byrne, 2000). Cognitive scientists have studied mental models as to how models engender thoughts and inferences (Mc Daniel, 2003).

It is in this context that Figure 5 explains the nature and process of a mental model of an entrepreneur that ultimately “scales” the world of reality in terms of mental representations. All the mental models have a few key components.

Figure 5: Mental Model
characteristics (Mc Daniel, 2003) whether of the entrepreneur or the scientist. For instance, mental models include what a person thinks is true; mental models are similar in structure to the thing or concept they represent; and it allows a person to predict the results of the actions. Thus mental models of an entrepreneur represent an entrepreneurial or opportunity recognition situation that ‘captures’ the possibility in different ways.

Cognitive approaches to strategy have examined the subjective nature of business environments and competitive situations but have failed to show how managerial (entrepreneurial) mental models lead to superior economic performance (Ginsberg and Stren, 2006).

Mental models of an entrepreneur that contain strategic choices and/or decision-making alternatives thus represent cognitive simplification/strategic processes that may dramatically affect the way decision-makers or entrepreneurs perform the task or mental model of the task. Individual differences in managerial action can be explained within the framework of a model of cognitive processes that has as its components, planning, attention, information coding, and knowledge base (Das and Misra, 1995).

The creation of the entrepreneurial mental model is based on the streams of information or environmental attributes of the scanned business environment. His total intellect, education, experience, intelligence, and personality form a system to guide the representation of reality (Alexander, 1972). According to expert information processing theory, experts possess knowledge structures or scripts about particular domain that enable them to significantly outperform non-experts who do not have access to such structures (Mitchell, et.al., 2000). In Mitchell and colleagues’ (2000) empirical findings, there are three entrepreneurial scripts: availability script (knowledge structure about the use of the specific arrangements that support their own performance and expert level mastery in a given domain), willingness script (knowledge structure that underlie the commitment to venturing and receptivity to the idea of starting a venture), and ability script (knowledge structure that individuals have about the capabilities, skills, knowledge, norms, and attitudes required to create a venture). Scripts are thus endowed with the mental model.

In further discussing the nature of an entrepreneur’s mental model, it may be observed that mental models are inferred constructs and/or scripts and entrepreneurs need not have conscious recognition (Manimala, 1992b) of their mental models that transform the information into usable forms. However, the process of mediation can be made effective if the entrepreneur knows what they think and plan for the future. According to the information processing approach, knowledge is at the centre of cognition in which the types of mental representations are factual (simple descriptions of an object), conceptual (relations among elements within a coherent structure that leads to classification hierarchies, cause and effect models, explanatory principles and ongoing generalizations), procedural (a procedure method or algorithm), and metacognitives (knowledge of coordinating one’s cognitive processing) (Anderson, et.al., 2001). And, metacognitive knowledge involves conscious recognition of strategies for coordinating one’s cognitive processing systems.

“Theories-in action” represented by cognitive maps and assumptions about what constitutes effective action have two dimensions: espoused theories and theories-in use (Argyris and Schon, 1974). Espoused theories are public explanations of what people say they use in choosing their behaviours; and, theories-in-use are behind the actual actions carried out. While the theory of mental model explains the manner of representation of knowledge, and the way the domain of knowledge is mapped, theories-in action do not represent the knowledge structure. Theories-in action point out the divergence between professed behaviour and actual behaviour executed. These distinctions further elaborate the significance of the underlying mental models of entrepreneurs, which enable them to produce outcomes.

Thus mental models constituted by the subjective interpretations and organizations of the scanned environmental information and the retrieved information from the entrepreneur’s own knowledge structures and representations shape the future behaviour/action pattern. Mental models represent the innovative plan to be carried out. As the nature of the mental models differs, the innovative activities also differ. The underlying scripts and the theories-in use which run parallel to mental models, and which are specific to entrepreneurs, anchor the entrepreneurial plan of action.

CONCLUSIONS
Entrepreneurship constitutes a multidimensional con-
struct which has clear observable dimensions. The earlier view of entrepreneurship as a purely economic activity has given way to the view that it is a superimposed process of individual-specific processes and the environmental complexities. Entrepreneurship does not occur in a vacuum. The personal disposition of the person and the environmental features determine the type and the form of entrepreneurship. Innovative ventures and new business activity emerge from the mediated process of the individualistic states and environmental attributes. While the interaction itself is complex and set in a changing frame, it is the interrelation of the process that makes it predictable and applicable in different contexts. The systematic process that is conceptualized cannot be far from the real world of business. The business process is to follow the model. By all means, it is clear that entrepreneurial outcomes are programmed by the platform of personality and cognition which implies that business ventures are created partially in response to changing environmental forces. The uniqueness of the model rests with the nature of the platform of personality and cognition that mediates the entrepreneurial outcomes enacted in response to the changing environmental forces.

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An entrepreneur tends to bite off a little more than he can chew hoping he’ll quickly learn how to chew it.

—Roy Ash