

PROPOSING A PARADIGM FOR ENTREPRENEURSHIP USING INFORMATION AND KNOWLEDGE THEORY

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ABSTRACT

The field of entrepreneurship lacks a broadly-shared theoretical framework in which central questions related to uncertainty, opportunity, and enterprising individuals may be understood. This paper proposes using information and knowledge theory as an organizing framework, building on concepts in classic entrepreneurship and other literatures in support of this view.

INTRODUCTION

Knight differentiated between uncertainty and risk, describing risk as uncertainty that can be measured “probabilistically” or statistically while “true uncertainty” is unmeasurable. Entrepreneurs are those who confront and act in the face of, and in the direction of, true uncertainty. To confront and act in the face of true uncertainty, entrepreneurs must sense that there is gain that more than offsets the potential downside of that uncertainty. Entrepreneurs are thus uniquely alert to opportunities presented by true uncertainty. They recognize not only market differences that others do not, but also recognize the opportunity for gain by taking actions that others would not.

Alertness and the ability to identify opportunities amidst uncertainty rests with the knowledge that entrepreneurs develop and that others do not. Because we live in a society characterized by knowledge fragmentation, it is possible for individuals to possess and acquire knowledge that others cannot. Such knowledge can be developed either through deliberate search or spontaneously, and it is the asymmetry in such knowledge that can lead to entrepreneurial rents. The most valuable knowledge to entrepreneurs is based upon specific information in which they make deliberate investments. Spontaneously-acquired information might be available to others and would therefore not present asymmetric opportunities, while it is more likely that deliberately-acquired information would be different from that possessed by others.

This paper focuses on asymmetric knowledge development as being at the core of entrepreneurship. While perspectives on entrepreneurial opportunity recognition and pursuit consistently reflect the view that entrepreneurs “know” something that others do not, on a practical level a series of important questions occur as one considers the relationships between uncertainty, information search and acquisition, and knowledge development. This paper presents a descriptive theory of knowledge creation, drawing on information and communication theories and on perspectives about knowledge development that have become current recently. A discussion of the perspectives drawn from the theory presented offers insight on the entrepreneurial process and holds promise for integrating a number of important research streams within the field of entrepreneurship

INFORMATION PROCESSING AND KNOWLEDGE CREATION

Communication theory has been instrumental in helping to define characteristics of information that may be useful in understanding its role in entrepreneurial organizations. Foundational work in the field holds that information refers to freedom of choice when one selects a message, and in this sense can be said to represent the uncertainty of a situation. For example, in a situation characterized by great uncertainty, many possible choices of messages about the situation exist; therefore a wide range of information possibilities to describe the situation are available. On the other hand, in a situation where less uncertainty exists, the number of possible message choices about the situation is limited, and thus a more restricted range of information exists. Thus “information in communication theory relates not so much to what you do say, as to what you could say”.

That communication theorists equate more information with greater uncertainty contradicts the usual prescriptions for entrepreneurs. We need to remind ourselves again of the critical distinctions made by Knight regarding types of uncertainty. Entrepreneurs seek to gather information about true uncertainty and by doing so expand their repertoire of possible opportunistic actions. But the transformation of information into meaning and knowledge for the entrepreneur, as is described below, serves to reduce estimable uncertainty for any one opportunistic action in that expanded repertoire.

Just as the choice of information about a situation begins to define the situation, so too does the conveyance of that information through organizational communication channels. Because of the means through which possible information about a situation is communicated, the messages received by members of an organization differ from the information itself. Organizational communication theorists have specifically linked organizational communication processes (scanning, probing, message routing, message summarizing) and channel characteristics (symbolic interactions, media richness, channel capacity and noise, signal continuity) with the degree to which organizations understand their environments and act upon such understanding.

These views make an important distinction between information and meaning for entrepreneurial organizations. Information is not meaning. Information is a characteristic of the environment which the organization faces. Information about the environment is selected and is then transformed by organizational communication channels and processes. As a result the meaning of information received is different from the situation which generated the range of informational possibilities. Information is thus transformed into meaning through its selection and through communication processes. The choice of communication channel or process may, in fact, serve to select the kind of information gathered about a situation out of all the kinds of information possible. It becomes very clear, then, that communication and information processes in organizations play a substantive role in how the organization perceives its environment. These processes serve both to select kinds of information gathered about the environment, and to transform this information into meaning within the organization.

Information theory builds support for the notion that transformation processes produce organizational knowledge that enhances organizational growth and survival through its proactive use. The conversion of environmental data into meaning enhances organizational knowledge, and more conclusively guides decision making, while Blackler concludes that organizations are knowledge-

based activity systems. Thus by enhancing the entrepreneurial organization's understanding of the market, the organization is better able to formulate any necessary and appropriate response.

To sum this far, the process of information diffusion within an entrepreneurial firm leads to the development of unique, firm-specific knowledge about opportunities in an emerging and uncertain environment. As a result potential new opportunities, not shared by competitor or incumbent firms, are presented for entrepreneurs to act upon. Asymmetry in knowledge produces competitive advantage. Alternatively, Rumelt, Schendel, and Teece hold that the dissemination of knowledge reduces the degree to which that particular knowledge can be a source of competitive advantage. By implication unique knowledge created within an entrepreneurial firm may confer competitive advantage, because it is not disseminated outside the firm and because it is asymmetric with knowledge located in other firms.

Communication and enhanced social interactions within entrepreneurial firms is a critically important dimension of opportunity identification and pursuit. The transformations of incipient meaning/knowledge enable its extension and refinement. Subsequent communication of knowledge within the firm allows for the progressive modification of insight and meaning, or conversely for the rejection and discarding of individual insights or perceived meanings which others find inappropriate. In this manner the knowledge developed initially by an individual may ultimately become an organization-wide asset, through validation among other organization members. Roszak writes that the fundamentally great ideas which motivate organizations and nations are those which are the result of generalizing across many participants a "sensible, connecting pattern" when confronted with a "vast, shapeless welter of facts" and information. The parallel between this perspective and the view of entrepreneurs as those who detect patterns in a complex context is striking.

The ability of entrepreneurial firms to continue identifying new opportunities over time also resides in the ability of its members to share and articulate information and knowledge. The communication of new information and the articulation of tacit knowledge highlights the importance of new ideas not explicitly considered by decision makers previously. Expanding on the need to better understand tacit elements, Nonaka therefore argues that "realizing the practical benefits of [tacit] knowledge centers on its externalization and amplification through dynamic interactions". Enhanced opportunity identification may also arise from making explicit knowledge tacit. Communication may serve to promote the expanded use of effective search procedures, which in turn may become routinized throughout the organization. Thus information and knowledge about new opportunities for entrepreneurial firms may arise from many sources and processes inside the firm. For entrepreneurial firms the creation of unique firm knowledge enables the firm to move in the direction of true uncertainty while reducing the risk of actions taken to embrace such uncertainty.

IMPLICATIONS FOR ENTREPRENEURSHIP RESEARCH

The theoretical model described here essentially portrays entrepreneurial firms as networks of communicating individuals, through which information is transformed into unique knowledge about new opportunities and actions for their pursuit. Viewing entrepreneurship as a network-based phenomenon focuses attention more on the relationships and information flows between individuals in the network. And viewing entrepreneurship in terms of information and knowledge networks can help clarify many questions asked about the phenomenon.

The structural characteristics of entrepreneurial networks affect the extent to which new opportunities are identified and successfully pursued. Network theorists will place particular importance on the connections between different social groups as particularly salient in the diffusion of new information and innovations. Burt finds that the information benefits to individuals who bridge “structural holes” between different network clusters (i.e. who have strong relations with other network clusters possessing very different information) are especially valuable. Thus while personal and extended networks of entrepreneurs are important in the startup process and in international expansion efforts, close examination of the unique information flows across such networks would be especially revealing.

The flow of information in a network is also a function of operating characteristics of the network and the people in it. Research might examine the channels of communication used within an entrepreneurial network to determine if they are efficient and effective. Efficiency may be conceptualized in two ways. First, it may represent the extent to which fewer channels of communication are used and/or fewer messages need be sent in order to create a specific meaning with the message receivers. Alternatively, efficiency may represent the extent to which reciprocation and iterative communication between senders and receivers are not needed in order to deliver a specific understanding. Communication effectiveness, on the other hand, implies changes in knowledge or behavior. Consistent with the concept of knowledge as justified belief among the set of organizational actors, entrepreneurial network effectiveness would therefore represent the extent to which a new opportunity is identified and agreed upon, and attendant actions in pursuit of that opportunity are initiated.

Cast in these terms, efficiency and effectiveness of entrepreneurial networks are not necessarily supportive of each other. At the extreme highly efficient communication processes may rest on highly refined common language or awfully short channels of communication, and may inhibit the kind of bridging of structural holes, reciprocation and iteration which characterizes the deliberate search for innovative new ideas. Thus peak efficiency may not be consistent with peak effectiveness. Future research is needed in order to more completely dimensionalize these concepts as well as understand their impact on opportunity identification and pursuit.

Characteristics of people in the network may enhance or impede the flow of information and knowledge development. Much research in entrepreneurship and innovation has devoted itself, for example, to examining the relationship between characteristics of individuals and entrepreneurial performance. A network analysis approach would argue that networks are an intervening construct between individuals and entrepreneurial performance; characteristics of individuals affect network dynamics, which in turn impacts entrepreneurial performance. West and Meyer, for example, partition top managers in new ventures into future-oriented and present-oriented subgroups based on cognitive characteristics and then examine the effects of communication flows between the subgroups on strategic change in these ventures. They find that changes in the direction pursued by new ventures is strongly associated with enhanced communication between futures and presents. This finding supports the structural holes argument. Other research has highlighted the controlling and detrimental influence of CEOs and powerful others on information sharing and communication in new ventures.