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**The Nature of Entrepreneurship:  
Society, the Individual and the Firm**

*Master thesis*

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## **Abstract:**

Entrepreneurship is often perceived as a crucial component of economic growth and social development. Studies into entrepreneurship inform policy design, thus the diverse understanding of entrepreneurship among scholars can create confusion in policy design. The current state of the field of entrepreneurial research is examined in order to identify the need for a universal definition of entrepreneurship. After a synthesis and analysis of prior research is conducted to identify the various links in perspectives, a new definition and framework is suggested. The resulting framework sees entrepreneurship as an autocatalytic process of creation of meaning and the consequent retention of said meaning in the structure of a new venture. The elements of this framework (autocatalytic process, creation of meaning, and retention in structure) can be assigned varying degrees of importance corresponding to differing perspectives, while simultaneously ensuring the presence of each element. The developed framework can be used to better inform the decisions of scholars and policy makers, due to the uncovering of the complex relationships between society, individuals and firms.

## **Keywords**

Entrepreneurship, opportunity structure, networks, path dependency, thermodynamics

**Range of thesis:** 111930 characters; 66 pages excluding bibliography and appendix

## Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.
2. The author hereby declares that all the sources and literature used have been properly cited.
3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague 13.05.2016

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Signature

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# Master Thesis Proposal

Institute of Political Studies  
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Date: 29.06.2015

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## Proposed Topic:

**The Nature of Entrepreneurship: Society, Individual and the Firm**

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## Topic Characteristics:

Meta-theoretical research in the field of entrepreneurship shows that the debate in this field is active as measured by the amount of contributions and the amount of participating disciplines. At the same time the debate is often described as underdeveloped, as there is no unifying perspective on the nature of entrepreneurship which slows the advance of research. Integrating multiple approaches present in the field of entrepreneurial research would require synthesizing a range of perspectives. This search for a common fundament and appropriate research tools is an important contribution to the development of the field.

## Working hypotheses:

1. Entrepreneurial research is highly fragmented
  - a. Existing research does not have a common framework or unity of perspectives
  - b. A common framework of analysis will be advantageous for scholars and will facilitate research
2. Current research tools are inadequate to capture dynamics and all of the aspects of the entrepreneurial process
3. Current definitions of entrepreneurship are biased by perception

## Methodology:

Analysis of primary sources as well as meta-theoretical studies will identify necessary qualities of a potential framework. Synthesis of perspective found in major streams will inform the development of said framework. Finally qualities of future research design will be inferred based on the developed framework.

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## 1. Introduction

Entrepreneurship is seen in academics and policy design as a powerful driver of economic growth and prosperity with its largest contributions being an improvement of welfare, the creation of jobs and higher social mobility. The effect of entrepreneurship is derived from the performance of small and medium enterprises that were shown to “have a direct effect in facilitating the development of new capacities” (Cumming et al. 2014). This warrants significant attention to entrepreneurship from policymakers as research guides policy design (Baumol et al. 2007) in the fields of growth stimulation and unemployment reduction. Van Praag and Versloot studied journal articles on entrepreneurship that evaluated the impact of entrepreneurial firms on the economy. Most studies that they analyzed gave policy advice based on findings and, while Van Praag and Versloot refrained from “discussing the implications these findings have for policymakers”, they did notice that further research of interrelationships in the field of entrepreneurship will likely affect policy making (Van Praag & Versloot 2007).

At the same time entrepreneurship also attracts attention in academics as a field of inquiry that is still in its early stages, promising many important causal links that are yet to be uncovered. MacMillan and Low in their review of the academic papers in the field of entrepreneurship showed that a wide range of research purposes exist and studies “asked different questions and adopted different units of analysis, theoretical perspectives and methodologies”(Low & MacMillan 1988). This presents the field of entrepreneurship research with a significant barrier. Analysis of meta-theoretical research by Lassen and Nielsen shows that the barrier is due to the

underdevelopment of the debate on philosophy of science assumptions that entrepreneurship researchers base their works on (Nielsen & Lassen 2012). This holds back the field of entrepreneurship research and is also prohibitive for many other actors that might benefit from the findings:

*“In the wake of the scant philosophy of science debate, scholars, students, policy-makers, advisors, educators and entrepreneurs are left with blurred understandings when presented with theoretical ideas, frameworks and studies claiming to have caught the essence of the entrepreneurial process”* (Nielsen & Lassen 2012).

Thus many meta-theoretical researchers call for some common fundament to base the research on and for unity in the underlying principles that will allow entrepreneurship research to achieve the “effect of standing on the shoulders of giants” (Nielsen & Lassen 2012). In the words of Stanley Hoffmann we are looking for “a kind of master key – not merely an intellectual, but operational paradigm... without this paradigm, there can be muddling through, but no continuous progress” (Hoffmann 1977, p.48). Moreover the methodology used by researchers is highly skewed towards quantitative methods. The larger share of the research sees the entrepreneurial process as “regulated by objective laws of equilibrium or punctuated equilibrium” (Nielsen & Lassen 2012, p.37). “However valuable this view of entrepreneurship is, it is a limited picture” (McDonald et al. 2015, p.21) state McDonald and his colleagues, a view supported by many other researches. Low and Macmillan highlight the lack of a priori hypothesis testing as “current standard appears to be data collection and a posteriori statistical testing” (Low & MacMillan 1988, p.154). These types of methods answer many questions but

leave the fundamental questions unanswered: “more is known about, for example, the who, where, what, when, how big, how long, how many and how much of entrepreneurship than the how and why” (McDonald et al. 2015, p.21).

Entrepreneurship brings dynamism to the economy by revitalizing and renewing markets through innovation. Entrepreneurs are largely seen as those who break patterns and change industries. The process of entrepreneurship is highly dynamical and “it makes little sense to search for general structures, equilibrium and universal hypotheses” (Nielsen & Lassen 2012, p.37). There is a broad recognition that creating a common ground for the synthesis, conceptualization, and development of new methodologies will allow the field of entrepreneurial research to advance (Nielsen & Lassen 2012; McDonald et al. 2015; Low & MacMillan 1988). It will enable various streams of research to collaborate and build methodologies effectively on the basis of the existing studies. Developing a unified perspective on entrepreneurship and the purpose of research will link studies that use different levels and units of analysis, as well as integrate approaches to research. This will increase efficiency and the quality of academic work as well as improve the value of policy advice.

## **2. Methodology**

Given the state of entrepreneurial research, a common platform for further studies will be beneficial. The purpose of this paper is to suggest one – to develop a concept of entrepreneurship that can accommodate existing research and build a unified perspective regarding the nature of entrepreneurship; a perspective that will be valid across cultures, geographies, times and economies. Such a concept should be broad enough to allow for a

variety of approaches and research questions and at the same time confine the assumptions about the phenomenon of entrepreneurship to ensure a common fundament. This is crucial for progress in the study of entrepreneurship as it will enable links between findings in different streams, something that is very difficult to achieve at the moment.

Thus the first hypothesis of this paper is:

1. Entrepreneurial research is highly fragmented
  - a. Existing research does not have a common framework or unity of perspectives
  - b. A common framework of analysis will be advantageous for scholars and will facilitate research

To substantiate the claim of the fragmentation in the field, a number of meta-theoretical studies in entrepreneurship will be used. Together with the review of other contributions it will constitute a literature review in this paper. An analysis of underlying assumptions, perspectives and levels of focus (from individual to population) will be performed with the goal of showing the low compatibility of existing approaches.

Furthermore, to overcome this barrier a synthesis of perspectives will be used. The main goal of such a synthesis is to propose an inclusive framework to guide further research. This approach should integrate multiple perspectives and levels of analysis as to follow the recommendations presented in reviewed papers. The proposed framework should validate a broad spectrum of research tools, thus leading to the increase of available research designs. Therefore the second hypothesis is:

2. Current research tools are inadequate to capture dynamics and all of the aspects of the entrepreneurial process

Finally, the development of a framework for inquiry into the phenomena of entrepreneurship will inform a new definition of entrepreneurial function. It should in equal proportions capture all key aspects of entrepreneurship, thus accounting for local perceptions and biases associated with entrepreneurship. A neutral definition of entrepreneurial function forces policy designers and researchers to explicitly apply local contexts and perceptions. This should be able to guide both research and policy design, as it will enable comparison across cultures, societies and states. This brings the discussion to the third hypothesis:

3. Current definitions of entrepreneurship are biased by perceptions

This hypothesis leads to a conclusion that if context-neutral definition of entrepreneurship can be produced it will become a stepping stone for policy and research.

To accomplish this task first the literature will be reviewed. After that the paper will analyze interactions of the society and an opportunity, the society and an entrepreneur, an opportunity and an entrepreneur. After that the role of the firm will be analyzed. Finally it will be possible to construct the framework of entrepreneurship.

### **3. Literature review**

Entrepreneurship is a subject that attracts a significant amount of research effort as it holds considerable relevance to the understanding of firms, industries and markets (Venkataraman & Shane 2000). Contributions to the field come from a variety of disciplines, developing the

debate further. Given the volume of research and the extent to which entrepreneurship affects various spheres of human activity, it would be wise to limit the scope of sources. The main focus of this work is to identify the essence of the entrepreneurial process; thus a rather large number of contributions must be synthesized. This makes it difficult to properly set out the borders of inquiry. Therefore it is justifiable to rely on the sources that aggregate previous studies and review recent contributions. That is to map out the intellectual path of the subject historically and interpret the narrative of the discourse through historical and interdisciplinary lenses.

This section will take a look at the position of the entrepreneur within economics starting with its introduction as introduced by Schumpeter, Kirzner, Knight and Demsetz, then the role that it was given in neoclassical and institutional economics will be discussed, and finally a rich variety of contemporary research will be interpreted: all with distinct sets of underlying assumptions.

### **3.1. First concepts**

Rather early on, in the beginning of the 18<sup>th</sup> century according to McDaniel (Mcdaniel 2005, p.485), the entrepreneur entered the discourse of economics. But it was the works of Schumpeter that put the entrepreneur right in the center of social and economic changes (Venkataraman & Shane 2000).

Schumpeter famously coined the actions of an entrepreneur as “creative destruction” arguing that enterprising individuals disrupt the markets with new, better and more efficient technologies. Quite the opposite was proposed by another renowned thinker, Kirzner. He saw the entrepreneur as the one who would find markets in disequilibrium and bring them back to a

stable state. Though for Schumpeter it was only for the sake of simplicity and clarity of the argument that the entrepreneur found the market at equilibrium. In reality it could have been at any point. Thus Schumpeter and Kirzner together mapped the “yin and yang” of entrepreneurship – entrepreneurs are the main actors in economy and its dynamics – one pulls markets out of equilibrium and another pushes them back to one.

It is definitely noticeable in the economy how more efficient firms take the place of the lesser efficient firms. In Faustian manner, destruction and creation are two sides of one coin. And of course competing firms follow innovation and adopt improvements.

Another significant contribution was done by Frank Knight. He showed that entrepreneurs take risks in conditions of uncertainty: activity that creates entrepreneurial profit. An article by Manne described Knight as the economist who highlighted the role of optimism in risk taking and who was most preoccupied with the entrepreneurship at the level of an individual (Manne 2014).

These were arguably the three most significant contributions which laid the foundation for the inquiry into the entrepreneurial process. Unfortunately that foundation did not provide economics with any concepts, tools or insights that could contribute to the explanation of market behavior. Indeed, Schumpeter, Kirzner and Knight failed to propel entrepreneurship to the center of the modern economics discourse as the agent of change. The reason behind this failure is best explained by Demsetz.



### 3.2. Classical economics

At this point in the narrative, the entrepreneur is one who *seizes a risky opportunity to extract a profit by starting a firm*. At the same time the nature of entrepreneurial input is left without explanation “apart perhaps – and often by implication – from starting up a new firm” (Manne 2014, p.250). This became a stepping stone for the critique set forth by Demsetz: “The new element is really not the entrepreneur – it is expanded opportunity set for maximizers... [in] a context in which knowledge is costly and imitation is not instantaneous” (Demsetz in (Manne 2014, p.252) ). This is a powerful critique as the entrepreneur is nothing but a profit maximizer, just as anybody else, meaning that no such distinct economic actor exists at all. And that could well explain why the entrepreneur is missing from neo-classical economics: he bore no specific function and did not add a significant amount to theory. The entrepreneur merely exploited opportunities that were present in economy and available to all market participants. Being imagined as an actor of change and dynamism he entered economic thought as an allocator of resources – as Demsetz explains:

*“Entrepreneurship was neglected because the problems of economic change would simply have made it more difficult to focus on the coordination problem”* ” (Demsetz in (Manne 2014, p.251)).

At this point not much is left of purely entrepreneurial function. One of the remaining qualities of the entrepreneur is the propensity to take risks and the trait of optimism – and that is clearly not something theory could be built upon. Another possible quality is “alertness” as found by Kirzner. ” (Manne 2014) That brings us to the following definition: an entrepreneur is an

individual *who recognizes the opportunity* and is *optimistic enough to believe that it is worth the risk*. Demsetz argues though that this can be just simply attributed to luck, further diminishing the role that entrepreneurs play.

Demsetz's claim about luck at this point has a chance to significantly undermine what is left of entrepreneurial input. Of course one can argue that any enterprise is a result of a chain of well-planned actions and decisions. However, the position of Demsetz is supported by Daniel Kahneman. Here though we have to temporarily step away from the assumption of rationality, as Kahnemans arguments are closer to behavioral economics than to neoclassical.

He and his colleague showed that people often use cognitive heuristics to "cut corners" when thinking and are prone to a variety of cognitive illusions. Kahneman argues that in a random world where things are rather unpredictable, luck contributes significantly to success. People tend to create compelling narratives to make sense of the world while the world's randomness undermines our ability to do so. The human mind prefers to see alertness instead of luck because it is easier to make sense of it (Kahneman 2011).

If we imagine an individual who acted on an opportunity that was not spotted by anybody else we can say that he is alert: he noticed an opportunity no one else was able to see. What if in the next, similar situation he was presented with an opportunity that was obvious but he did not act on it even though he was in the position to do so. We can try to come up with some explanation like: "his initial success made him arrogant and that made him less receptive to ideas". Kahneman showed that individuals tend to ignore averages and instead make conclusions bade on single results. But as results center on averages the exceptionally good

results are more likely to be followed by worse. Adapting this argument for the purpose of this paper we can claim that somebody is alert only if we can show that this individual exhibits a significantly higher rate of opportunity recognition than a control group that is exposed to the same opportunity set over a long enough timeframe. Furthermore this is impractical as presence of the opportunity can be measured only after the fact that it was discovered.

Unfortunately there are not that many opportunities to start up a new firm that will gain a worldwide success to claim that it is alertness and not the luck that is behind recognition of profitable opportunities. Therefore at this point Demsetz's critique is valid and nothing is left as a purely entrepreneurial function. The entrepreneur is no different from any other profit-maximizer. He just happened to act on an opportunity.

This well explains why neoclassical economics is devoid of an entrepreneur – its concept is not meaningful enough to warrant its scientific use. But the entrepreneur was not entirely gone – he found refuge in two distinct fields: institutional economics and entrepreneurial process studies.

### **3.3. Institutional economics**

In an article titled "American Social Science" Stanley Hoffmann wrote:

*"Scholars do not like to think about their intellectual dependence on the status of their country, and on the ambitions of the political elite; it disturbs their sense of belonging to a cosmopolitan, free-floating community of science... ...And yet, the link exists. And it is sometimes reinforced by institutional arrangements"* (Hoffmann 1977).

This is a significant issue in social sciences, which affects economics as well. Each economic crisis forces policy makers to turn to academics and research institutions for advice, increasing the demand for scholarly research in the fields of growth, investment and employment creation. A significant portion of economic writing was motivated by the demand for such advice with one of the research goals being to formulate policy advice based on findings (Van Praag & Versloot 2007). In some cases, the needs of policy makers even shape research methods:

*“...economic growth is a long run phenomenon, and so the much greater challenge is to design and implement policies that foster growth in the long run. We believe that policy makers are most usefully served by having a relatively simple framework for achieving this objective”*  
(Baumol et al. 2007)

This bit of context behind academic inquiry into the topic of growth explains the interest of the entrepreneur to institutional economics. As implied by its name, institutional economics is primarily concerned with how institutions affect economic behavior. One of the main challenges in the field is to link institutions with growth. The quest in finding that link brought many minds to the idea of entrepreneurship as “a main mediator between institutions and growth” (Bjørnskov & Foss 2012, p.247). Focusing on entrepreneurship gave theory traction and promised an impact on actual economic outcomes.

As we learned before, classical economics ruled out the entrepreneur for not being truly outstanding from other individuals. How does institutional economics bring him back?

### 3.3.1. The role of the firm

It is well known that economic growth is built on the “brute force” of additional units of capital or labor, as well as on technological growth (Baumol et al. 2007). In his book “Good Capitalism, Bad Capitalism” Baumol limits the definition of an entrepreneur to “an entity, new or existing, that provides a new product or service or that develops and uses new methods to produce or deliver existing goods and services at lower costs” (Baumol et al. 2007, p.3) . With this definition he focuses his research on the innovating aspect of entrepreneurship as opposed to the broader definition of entrepreneurship as “the manifest ability and willingness of individuals” to perceive new economic opportunities and to introduce their ways of seizing these opportunities”(Bjørnskov & Foss 2012, p.249) which encompasses also replicative and destructive entrepreneurship (as categorized by Baumol). The reason the entrepreneur becomes central to growth theories actually lies in the role that *firms* play in growth: “Radical breakthroughs tend to be disproportionately developed and brought to market by a single individual or new firm” (Baumol et al. 2007, p.86) Indeed the entrepreneur and entrepreneurial firm are used interchangeably (Van Praag & Versloot 2007)

As scholars talk about the commercialization and implementation of innovations as well as job creation, they refer to the effects of the firm. It is important to distinguish the roles different actors play in the process of introducing products to the market. Scientists, inventors, engineers, marketing specialists, artists and practically anyone may come up with an invention, improvement, new product or service and sell it on the market or commercialize it himself. But it will be the firm that becomes the vessel of introducing it to the market making the entrepreneur the builder of such a vessel.

The question as to why the firm was missing from classical economics was answered by Coase in his Nobel Prize speech: “The firm in mainstream economics has often been described as a black box” (Coase 1992, p.3). He found that firms exist for a reason – firms are more efficient at coordination than markets in some cases (Coase 1992). This is why firms were neglected in classical economics – from the point of view of classical economic pricing in the markets handled all necessary coordination. Therefore when markets face uncertainty the prices are imprecise. This is especially the case for innovations as their value is not yet discovered and understood. Transactions costs are exceptionally high for innovations and it is the firms are better suited to discover true value of new products, services and technologies.

This creates a significant problem: why are small entrepreneurial firms on average are better at implementing innovations than incumbent firms? Superior recognition of the true value of innovations by entrepreneurial firms suggests that they are more efficient at arriving at the true price. The reasons why this happens are not readily available. Baumol suggests that the reason for it is bureaucracy and rigidity of the big firms (Baumol et al. 2007). However, he never expanded on the topic as this is out of the scope of his work.

As institutional economics notes the significant input of smaller firms, the obvious advice becomes to stimulate entrepreneurs to open more firms. At this point the definition of entrepreneurship in institutional economics essentially remains: “individual that opens a firm”. Why a new firm is more innovative is not clear. It seems that for many scholars it often suffices to define the entrepreneur as the inventor of a new product or service that his firm commercializes. For example, a narrower definition of the entrepreneur by Baumol that was

mentioned above then becomes: “an inventor who creates a firm for his invention”. What about entrepreneurs that commercialize new technologies bought at open markets? There is no proper answer to be found about this difference.

The great achievement of Institutional economics in the field of entrepreneurship was to recognize that firms are different and new firms are more perceptive to new technologies and ways of conducting business. However, as soon as institutional economists reach useful policy advice the inquiry into what entrepreneurship is stops. Better clues to an answer about the nature of the elusive entrepreneur lie in the field fully dedicated to that question – entrepreneurial process research.

### **3.4. Entrepreneurial process research**

So far we have seen two major streams in economic thought and evaluated the role of the entrepreneur in both of them. There is very little to no room for the entrepreneur as a unit of analysis or a meaningful research concept and it is only used as “useful grammar” (Demsetz in (Manne 2014, p.253)). This is unfortunate for the study of research, but at the same time useful for the purpose of this paper. The role given to the entrepreneur in various fields is well explained by the underlying assumptions of each field. By analyzing these assumptions it will be possible to single out those leading to the elimination of the distinct entrepreneurial role in theory. This will enable scholars to identify and switch to assumptions that will provide entrepreneurship with a sound theory and reintroduce it to economics in a useful and meaningful way.

Neoclassical economics has a very strong positivist position – it looks for laws and causal relationships and employs methodology adopted from natural sciences. The assumption about human nature fits this well – human beings are seen as rational profit-maximizing individuals. It seems that “homo economicus” is a separate species altogether, but it is a necessary assumption for models that are used in most economic research. At the same time it eliminates the difference between entrepreneurs and other individuals. The only trait that is possibly entrepreneur-specific is alertness. Though, it cannot be realistically measured except for after the individual has reacted to an opportunity. Thus it cannot be separated from luck.

In neoclassical economics the market does all of the coordination and this rules out the firm as a coordinator of economic activity. But the discovery of the role transaction costs shows that firms have an important economic role. Institutional economics went further as they noticed that younger firms have a higher impact than established firms on some aspects. The practical implication of this observation is that the creation of firms should be stimulated. This can be achieved through lowering the transaction costs of establishing a business. This suggests a highly deterministic assumption about human nature. Then entrepreneurs are those who would open an enterprise if the transaction costs of doing so would be zero – instead of free will their actions are determined by environment. Institutional economics also carries a strong positivist attitude similar to neoclassical economics as well as a similar methodology.

More contemporary research employed a wider variety of assumptions and perspectives on entrepreneurship and in general saw more promise in studying the phenomenon of entrepreneurship. To navigate efficiently among the approaches I will use the division into five



images suggested by Nielsen and Lassen (Nielsen & Lassen 2012). The distinction was based on the philosophy of science assumptions and the use of images serves to facilitate discussion as such classification can be understood intuitively.

These images are: the Image of Machines, the Image of Evolution, the Image of Contingencies, the Image of Mind and the Image of Social Becoming. Categorization by images is not strict and is used for ease of orientation in broad theoretical material.

#### **3.4.1. The Image of Machines**

The choice of label for this image by Lassen and Nielsen was based on the explanation of entrepreneurial process by contributions in this stream of research as “a deliberate and instrumental process, reinforced by planning and targeted at achieving specific, predictable and universal goals” (Nielsen & Lassen 2012, p.43). In previous analysis a similar group of literature is classified under “Strategic Adaptation Perspective” (Low & MacMillan 1988). The essential characteristic of this perspective is the search for success factors in establishing new enterprises, and by extension business practices that further the chances of success of an enterprise. Entrepreneurship in this approach is indeed mechanical – it is about creating a plan and executing it.

These studies view innovation as something that happens on its own, independently and exogenously – a view similar to neoclassical economics, in which in the words of Baumol innovation is seen as “manna from heaven” (Baumol et al. 2007, p.5). In the Image of Machines innovation has to be facilitated, harvested and assigned a best strategy for commercialization:

*“Next, the status of the commercialization candidate as a science, technology or engineered product is stated. Knowledge of a candidate’s status for these two characteristics allows for a determination of the best commercialization strategy... disruptive innovations are competence-destroying and as such are of special interest to entrepreneurial and intrapreneurial firms that anticipate profit from the ‘creative destruction’ that is invoked by such innovations” (Linton & Walsh 2008, p.87).*

Strategic adaptation perspective explains the impact of entrepreneurial firms on the economy through strategic choice. It argues that the commercialization of disruptive and radical innovations is the most effective by means of new entrepreneurial firms. Therefore, the most appropriate strategy to commercialize disruptive innovations is through the establishment of a new firm – as a spin-off from an existing company or a completely new one. However, a large obstacle to this approach is the complexity of markets and industries – entrepreneurial firms are extremely diverse (Gartner 1985). Explaining successes and failures of enterprises in various industries is an increasingly complex task. To deal with such complexity, a contingent approach was developed (Low & MacMillan 1988, p.143). Contributions that build upon the idea of contingent variables fall under the “Image of Contingencies” in the framework developed by Nielsen and Lassen. This image will be reviewed later.

Low and MacMillan note that most of “the entrepreneurial literature has implicitly assumed a strategic adaptation perspective” (Low & MacMillan 1988, p.156) which can be attributed to similarities between assumptions of neoclassical economics and strategic perspective. Economics in general and entrepreneurship in particular follow laws and develop along

equilibrium paths. Entrepreneurs under the assumption of rationality the entrepreneur will choose the best strategy and implement best practices. This leaves little room for any voluntarism in this approach. At the level of the individual, those who excel at planning and strategizing will become entrepreneurs. These skills are also attainable through practice as suggested by studies of repeatedly successful entrepreneurs (Low & MacMillan 1988, p.142).

### **3.4.2. The image of Evolution**

Part of entrepreneurial research chose population, communities and industries as the level of analysis (Nielsen & Lassen 2012; Low & MacMillan 1988) rather than entrepreneurs and enterprises. This stream of inquiry focuses on environmental determinants of the success of new enterprises. In opposition to the stance of strategic adaptation perspective, environmental perspective sees the organization as inflexible and inert, with limited capacity to adapt (Low & MacMillan 1988). Focus at the population level allows for the inclusion of institutional perspective as part of environmental determinants and through this link brings the studies within the image of evolution closer to institutional economics. The choice of the level of analysis allows enriching research with considerations of historical, societal and other settings for the entrepreneurial process (Nielsen & Lassen 2012).

Contributions that are categorized under this image also develop more dynamic views of the economy – entrepreneurs act on changes in the environment such as “technological and demographic change” (Low & MacMillan 1988, p.145). Further development of this perspective led to the study of networks as an influential determinant in becoming an entrepreneur. It is possible to define a network as “a set of actors (individuals and organizations) and a set of

linkages between the actors” (Hoang & Antoncic 2003, p.168). It has been previously argued that the distribution of opportunities is not equal across the population but comes to key locations in a network (Low & MacMillan 1988) or in the words of Shane and Venkataraman “information corridors” (Venkataraman & Shane 2000, p.222).

From the environmental perspective entrepreneurs are chosen from the population based on the characteristics of the environment itself. Similarly, institutional economics also views the entrepreneur as an individual whose decision to start a business is determined by transaction costs, which is also part of a larger environmental perspective. At the individual level, an important determinant is discovered – the position of an individual in relation to or within a network.

An additional concept within this stream is the legitimacy of a product or service and consequently the legitimacy of a firm. If goods and services are desired then they have a place in the environment – or in the words of the studies within this image – “legitimate and desirable by the host society” (Reynolds in (Nielsen & Lassen 2012, p.44)). A variety of goods becomes legitimate due to changes in an environment and consequently multiple entrepreneurs are selected based on their position within global and local networks. Organizations that are created by entrepreneurs are determined by the characteristics of the host environment such as available resource sets (Low & MacMillan 1988, p.145). Afterwards the newly established firms undergo an evolutionary selection, where “fit” organizations become successful and “unfit” organizations dissolve. This life cycle of an organization fuels environmental change, which brings about another turn of opportunities.

### 3.4.3. The Image of Contingencies

As meta-research indicates most studies are often confined to a single approach mostly supported by quantitative analysis (Low & MacMillan 1988; McDonald et al. 2015; Nielsen & Lassen 2012). The contingency stream answers their calls for a variety of approaches and multiple levels of analysis. Nielsen and Lassen describe the main approach of literature within the image as based on a combination of variables or elements. The interaction of those elements creates a dynamic and complex economic system (McKelvey 2004). As complex systems became part of entrepreneurial research the study of complex systems entered the field. It focuses on the dynamic aspect of organizing and “order-creation” (Lichtenstein et al. 2006; McKelvey 2004).

Part of the research branched out from the strategic adaptation perspective, shifting from success factors to contingent variables of success (Low & MacMillan 1988). An empirical study done by Delmar and Shane on young enterprises in Sweden looked into legitimizing activities and the sequence of these activities – whether the order of the steps has an effect on survival of enterprises (Delmar & Shane 2004). When the authors listed the limitations of their research they mentioned that they have measured neither quality nor magnitude of these actions. These would also affect the survival of the new enterprise, which shows how complex the process of organizational creation is. Another example within the image of contingencies can be seen in the work of Gartner in which he develops a framework that aims to provide analytical tools for explanation of new venture creation, something that was as well attempted by scholars researching complexity (Lichtenstein et al. 2006; Gartner 1985). His framework explains venture creation through four dimensions: individuals, organization, environment and process (Gartner

1985). Nielsen and Lassen in their meta-theoretical research conclude that contributions within the Contingency Image seek to establish structural theories and frameworks for studying the entrepreneurial process (Nielsen & Lassen 2012). In this regard works are still within the positivist assumption of science – they seek to explain processes that are guided by certain laws, but they break away from the dominant approaches as they analyze open-systems that are constantly changing in non-linear fashion. Methodology becomes more varied as some idiographic research techniques are employed. McKelvey describes them as “thick” studies – studying the context and complexity of a given situation that one firm is facing at one point in time as opposed to “thin” studies, which are the nomothetic by type (McKelvey 2004).

#### **3.4.4. The Image of Mind**

Part of entrepreneurial studies has historically focused on the individual and her or his physiological and cognitive traits. These contributions attempted to find a way to differentiate between entrepreneurs and non-entrepreneurs (Nielsen & Lassen 2012), to find common traits among all entrepreneurs (Low & MacMillan 1988), and to develop a physiological profile of the entrepreneur (Gartner 1985). Nielsen and Lassen noted that recent research turned its focus away from the formerly prevalent “traits portfolio” towards “cognitive or social cognitive processes of individuals” (Nielsen & Lassen 2012, p.48).

Earlier research within the image examined such personality traits as the need for achievement, locus of control, tolerance of ambiguity, risk seeking and risk aversion, and self-efficacy among others (Venkataraman & Shane 2000). Low and MacMillan find that studies focusing on personality characteristics are plagued with methodological problems such as “small samples,

non-comparability of samples and static terms of reference”, further concluding that the research showed that the most common trait of entrepreneurs is variety – “they tend to reside at the tails of population distribution” (Low & MacMillan 1988, p.148).

Studies of cognitive and psychological aspects of entrepreneurship utilize the individual as the level of analysis. The entrepreneur is then compared to the entire population and other entrepreneurs in an attempt to uncover patterns in behavior and cognition. Another approach introduces another dimension to behavior and decision-making of entrepreneurs – social context. Studies in psychology show a “powerful influence of social factors on cognition and information processing” (Aldrich and Zimmer in (Low & MacMillan 1988, p.150). Thus a portion of research recognized the importance of networks and the broader social context in shaping entrepreneurs. This led Nielsen and Lassen to separate out the research of contexts behind entrepreneurship into another image.

#### **3.4.5. The Image of Social Becoming**

Studies falling under the image of social becoming generally employ different methodologies than studies categorized under other perspectives. These studies include a larger share of idiographic research (Nielsen & Lassen 2012), or as in the classification of McKelvey “thick” studies (McKelvey 2004). It is possible to view entrepreneurship as a function, a process instead of occupation (Gartner 1985); this view embeds entrepreneurship in a broad variety of social processes. Understanding entrepreneurship from this standpoint requires qualitative methods (McDonald et al. 2015) and more integrative theories to capture “more complicated plot lines” (McKelvey 2004, p.330).

Contributions in this field resemble “a social constructivist conception of reality and science” (Nielsen & Lassen 2012, p.49) and display more combinations of assumptions. In itself this approach is closer to anti-positivist and nominalist views of entrepreneurship. It conceptualizes the phenomenon of entrepreneurship as a construction of society and from the point of view of an individual, as Baumol showed different societies exhibited entrepreneurial activity in vastly different ways (Baumol 1990). At the same time there were successful attempts to conduct realist and positivist research, focusing on causation and laws, such as conceptualizing social and cultural settings as “opportunity structure” (Glade 1967). This allowed for the development of frameworks and theories that aim to predict as well as explain entrepreneurial dynamics.

#### **4. Fragmentation of research**

The review of literature suggests that there are five substantive perspectives in the field of entrepreneurial research. They were categorized as images by Lassen and Nielsen and perspectives and theories by Low and MacMillan. Based on the assumptions they make it is possible to relate the images and perspectives to other fields:

- Image of machines: management theory, neoclassical economics, game theory
- Image of evolution: organizational and administrative theory, institutional economics, network studies, biology
- Image of contingencies: complexity studies, design theory, physics
- Image of mind: psychology, behavioral economics
- Image of social becoming: constructivism, social sciences



These connections to other subjects show how diverse the approaches toward entrepreneurship are. Not surprisingly it is hard to reconcile these views with each other. Furthermore differences between the views span multiple levels of analysis. Table 1 conceptualizes three levels of analysis: the entrepreneur, firm and society across the five images.

<b>Image</b>	<b>Entrepreneur</b>	<b>Firm</b>	<b>Society</b>
<b>Machines</b>	Rational planner, decision-maker	A set of business practices	Markets in equilibrium
<b>Evolution</b>	Population regularity, determined by position within network/society	An inflexible and inert entity	A set of determinants
<b>Contingencies</b>	Operates contextually in a given environment	A complex entity existing in multiple dimensions	An open system consisting of agents interacting in nonlinear way
<b>Image</b>	Actor determined by cognitive schemes, heuristics, biases	An institution that structures the distribution of attention and filtering of information	Influences cognitive processes of individuals
<b>Social becoming</b>	Socially constructed	Socially embedded process	An opportunity structure set by norms, contexts and perceptions

*Table 1: Levels of analysis and Images of entrepreneurship*

As studies often focus their attention on a single level of analysis, contributions within the same perspective or image may still define entrepreneurship differently. Altogether it leads to a significant variation regarding how scholars define entrepreneurship. Scholars often define “the field in terms of individual alone” (Venkataraman & Shane 2000, p.218):

*“as a captain of industry”, a hard-headed risk bearer, risk taker or a “rapacious risk avoider”; whether he merely metamorphoses into an entrepreneur at certain moments and is something else the rest of the time, or whether his need for achievement and capacity for innovation are always ticking away; whether he is a “displaced person”, something close to a juvenile delinquent, or a “man apart” with an absolutely clear-headed perception of reality, an aberrant “artist” with an “innate sense of impending change” or whether he is, indeed, the completely political animal, a community builder” (Gartner 1985, p.699).*

Defining entrepreneurship as a function also yielded a number of meanings:

*“Schumpeter defined entrepreneurship as “carrying out new combinations”. Knight’s definition focused on the ability to predict the future successfully. Leibenstein argued that firms do not necessarily operate at the outer limit of their production function; therefore, entrepreneurship is the ability to work smarter and harder than your competitor. Kirzner’s concept is closely linked to arbitrage and the ability to correctly anticipate where the next market imperfection and imbalances will be. Cole defined entrepreneurship as purposeful activity to initiate, maintain, and develop a profit-oriented business. Stevenson, Roberts and Grousbeck suggested that entrepreneurship is being driven by perception of opportunity, rather than resources currently controlled. And Gartner defined entrepreneurship as the creation of new organizations” (Low & MacMillan 1988, p.140).*

Some scholars suggest expanding entrepreneurship even further. Baumol extends entrepreneurship beyond ventures by categorizing it as productive, unproductive and destructive (Baumol 1990). Bjørnskov and Foss stated that “established firms are perfectly

capable of exercising entrepreneurship” (Bjørnskov & Foss 2012, p.248). In the end this leaves us with a definition so blurry it is essentially empty, as it includes too many elements, which in addition are often opposites of each other. This brings us to the first hypothesis – entrepreneurial research is highly fragmented. No common framework exists in entrepreneurial research and even studies that share the same perspective on the nature of entrepreneurship use different definitions.

The argument is not only that this is the current state of entrepreneurial research, but also that this inhibits progress within the field. As shown previously, definitions of entrepreneurship significantly affect how a group of entrepreneurs and entrepreneurial firms are defined. Some like Schumpeter and Baumol focus on the innovative aspect of entrepreneurship, while other scholars include replicative entrepreneurship in their research. Some scholars consider only young firms to be entrepreneurial, while other researchers believe that long established firms are capable of entrepreneurship as well. Many view entrepreneurship as activities driven by the pursuit of monetary gains, thus they focus only on for-profit organizations. At the same time for other scholars both monetary and psychic gains are associated with entrepreneurship and therefore entrepreneurial studies may include social entrepreneurship (Dees & Anderson 2003). Researchers have also been divided on the matter of including self-employed individuals as entrepreneurs.

The discrepancies in definitions lead to difficulties in inferences and comparisons of research results. If studies are built on samples taken from different populations without explicitly stating the difference, then comparisons of the results will be meaningless, or worse,

misleading. The lack of a common foundation in research shows itself through the independent terminology of each stream, incomparable samples, and the inability to integrate the advances from other fields. Moreover, as suggested above, the definition of entrepreneurship can be argued to be socially constructed thus carrying over biases and perceptions of scholars without clear identification of said biases. All of these points have a negative impact on research and policy design. Studies that focus on innovative entrepreneurship will have little use for policymakers residing in countries with factor driven economies. Most of research is centered on capitalist, liberal and market-oriented approaches. Will policy advice be valid for countries with traditional values or socialist policies? Indeed how can scholars that studied technology driven economies with long histories of liberal policies provide useful policy advice to developing countries or countries transitioning from communism? In order to filter out society specific perceptions and personal biases, and in order to link studies from various fields there should be a framework that can explicitly account for these elements. The outcome of such an inquiry should include a definition of entrepreneurship, along with a framework for studying it, which will inform better research design and provide policy makers with a way to adapt the results of entrepreneurial research to the existing contexts of a particular economy.

There are many questions that could be asked in regards to entrepreneurship. But to guide the development of a framework only the most significant questions should be chosen. Following the suggestion of Venkataraman and Shane the following three questions should be answered:

- What is the nature of opportunity?
- Which individuals discover and exploit this opportunities?

- What are the means of exploiting the opportunity?

(Venkataraman & Shane, 2000)

## **5. Opportunities and entrepreneurs**

To begin the discussion on opportunities the following definition will be utilized – in “economic terms” an opportunity is a discrepancy between current output and potential output. In markets at equilibrium, opportunity is momentary. Markets modeled without transaction, search, and information costs will move almost instantaneously to a new equilibrium, thus opportunity will be realized. However, as shown in the literature review, the addition of transaction costs changes the role that firms play in the market. These costs share the coordination role with the markets. Markets assign the price according to existing knowledge, but under conditions of uncertainty firms step in to exercise their judgement regarding the value of an innovation and bear the risks associated with it. This suggests that new ventures somehow are more capable of reaching the “correct” price of an innovation at lower costs than markets. Therefore, it can be seen that establishing a firm, in creating an organization or venture, is the response of an entrepreneur to the opportunity that markets have not fulfilled. Creating an enterprise is associated with costs of establishing a new venture thus narrowing the economic opportunity to an entrepreneurial opportunity, which is the possibility of establishing and sustaining an organization that will exploit said economic opportunity.

This definition has all three elements that Venkataraman and Shane outlined: an opportunity (economic), an individual (entrepreneur), and a method of exploitation (firm). It is possible to imagine that the costs of starting a firm could be too high to undertake for a given opportunity,

but it doesn't eliminate the opportunity or an individual willing to act on it. The relation between entrepreneur and opportunity is more complicated.

What can be considered an opportunity? If something is economically feasible but no one is willing to act on it, perhaps because the uncertainty and risk outweigh possible returns, then can it still be regarded as opportunity? And if in a society there are no entrepreneurs to act on the opportunity, perhaps because the opportunity cost is too high and it is more preferable to work in existing firms, then can we claim that opportunity is present?

Baumol, in his article on the types of entrepreneurship, suggests that entrepreneurial talent is present in all societies and its allocation is guided by the opportunity costs that are dependent on the "rules of the game" (Baumol 1990). He argues that individuals that sought wealth and recognition in Ancient Rome would choose military careers over manufacturing or commerce as it was seen more desirable and "normal" for a Roman citizen. By invoking this argument Baumol greatly expands the boundaries of entrepreneurship. Indeed amassing an army to raid neighboring territories is in essence an opportunity for a General (entrepreneur) to organize an army (method) in order to gain wealth and recognition by raiding a weak neighbor (opportunity).

Thus Baumol adopts a social constructivist position on entrepreneurship even though it is not stated in his text. If one can claim that establishing a bureaucratic apparatus to extract rents or creating an army of mercenaries to pursue profitable opportunities of questionable morality can be regarded as entrepreneurship, then it is necessary to account for such activities when creating a framework of entrepreneurship.

The framework has to account for social perceptions, contexts, norm, institutions and biases. Opportunities and entrepreneurs to a considerable extent depend on the society. The following questions illustrate this point:

1. If two groups are selected from different societies and are exposed to the same situation, how different will the opportunities identified by each be?
2. If an entrepreneur, as perceived in his host society, will travel to a variety of other societies – will he be recognized as entrepreneur also there?

Two streams of research tried to develop a way to account for differences in entrepreneurship among societies. On one hand, institutional economics and studies of entrepreneurship, which fall under the image of evolution, suggested the concept of an institutional matrix to explain how the rules and costs associated with them affect entrepreneurship. On the other hand, there are contributions within the image of social becoming such as the “opportunity structure” framework suggested by Glade. These will be used to explain how opportunities depend on societies.

### **5.1. Opportunities and the society**

There are several contributions that study the social dimensions of entrepreneurship (Shapero & Sokol 1982; Glade 1967). Building on these developed approaches the following view of opportunity is suggested, the factors that form opportunities can be classified as objective or society specific.

The objective opportunity is based on available resource sets: capital, labor and knowledge. It encompasses a range of all possible states that can be achieved in the future and it generally

sets borders as to what is attainable. The society specific opportunity is contingent upon norms and institutions of the society. Norms that are shared within a group inform the members of the group of actions that are prohibited, allowed and rewarded. To follow the example of Baumol – norms in Ancient Rome saw war as noble and society rewarded those who were successful in war.

The institutional matrix is a derivative of norms, at least in younger societies. It may be argued that older institutions contain inherited components of older norms. The institutional matrix develops together with norms, but follows its own laws. Though, the exact manner of these interactions is not of immediate interest to this paper. Generally the norms are categorical – they prohibit some opportunities and allow other ones. The institutional matrix is conceptualized through the transaction costs it imposes on opportunities.

Together the various norms influence what a given society desires: for example prosperity, enlightenment, territorial dominance or religious achievement. The institutional matrix plays a coordinating role by imposing transaction costs and structuring behavior along the lines of norms – how easy (inexpensive) or hard (costly) it is to engage in a particular activity. Available resources represent the objective opportunity structure – the economic one. It limits what a society can achieve given its norms: whether it can grow an industry, build a network of universities, create a military machine to conquer neighboring states, or build monumental temples to worship gods.



## 5.2. Entrepreneurs and the society

The next question is how entrepreneurship is affected by society's opportunity structure and perceptions. As previously suggested, entrepreneurship can be viewed as a socially constructed phenomenon. Therefore this should be accounted for in the framework. At this stage entrepreneur can be defined through opportunity, as an individual who acts on such opportunities. Opportunity already holds an imprint of opportunity structure on the society, thus entrepreneurial intentions are already put into the context of the society. To build a more comprehensive framework it is necessary to expand on the entrepreneurial intentions. A fitting framework was suggested earlier by Fitzsimmons and Douglas (Fitzsimmons & Douglas 2011). As existing research suggests, "entrepreneurial intentions are largely a function of perceptions of desirability and perceptions of feasibility" (Fitzsimmons & Douglas 2011, p.432). To develop this approach both perceptions should be linked at the level of society.

Desirability to be an entrepreneur depends on the personal preferences of an individual. These preferences are not matched against some objective entrepreneurial activity, but they are compared to what entrepreneurship is perceived to be by an individual. In turn the perception of an entrepreneur is imposed by society. While some societies shape the image of an entrepreneur as an educator and organizer, other societies see the entrepreneur as an aggressor and disruptor. Both images are valid as entrepreneurial but can be expected to attract individuals with differing sets of preferences.

Feasibility from the position of an individual is the possession of "necessary skills and abilities required to be successful" (Fitzsimmons & Douglas 2011, p.433) when presented with

opportunity. It reflects the resources that are available to an individual and his personal characteristics that can contribute to the exploitation of the opportunity. The societal portion of feasibility is the perception of an opportunity – a personal interpretation of opportunity structure.

These factors together expand the framework of entrepreneurial intentions in Fitzsimmons and Douglas. Figure 1 presents the same framework where perceived feasibility and desirability are separated into two factors each.

*Figure 1: factors of perception in formation of entrepreneurial intentions*

		Individual capability		Opportunity perception	
		Feasibility			
		Low	High	Low	High
Perception of entrepreneurship	High	Inevitable entrepreneur	Natural entrepreneur		
	Low	Non-entrepreneur	Accidental entrepreneur		
Individual preferences					

It should be noted that in this model there are two strong (direct) links from the society level to entrepreneurial intention and two weak (indirect) links. The strong links are the perception of opportunity and the perception of entrepreneurship as they are directly affected by society. On the other hand, the influence of society on personal preferences and the influence of society on the perception of individual capability are the weak links.

The model presented in Figure 1 is a step forward in comparison with earlier attempts at entrepreneurial categorization. Previously, studies that attempted to develop a typology of entrepreneurs based the division on the various types of personal characteristics (Low & MacMillan, 1988). The model developed in this paper explains the nature of discrepancies between the dominant entrepreneurial personalities in different societies. Therefore, the model can account for entrepreneurial types with contrasting characteristics. For example both risk seeking and risk averse or more complex “promotion focus” and “prevention focus” behavior types can be common attributes of entrepreneurs depending on the society wide preference for one of these qualities.

According to Figure 1 some individuals who show a low preference for entrepreneurial activities start an enterprise at any rate, as they identify an opportunity and are in a position to exploit it. These are the “accidental” entrepreneurs. “Accidental” entrepreneurs are not intrinsically motivated to choose entrepreneurship as a career path, as they do not derive any utility from the process itself, hence low desirability. The range of personal and cultural motives renders an attempt at the categorization of entrepreneurs based on personal characteristics irrelevant beyond one societal group.

Further specification of the four factors is necessary to develop a more dynamic and inclusive model. The social dynamism can be captured through the feedback loops or in other words reflexivity:

*“Local agent interactions may form a group level coherence and common meanings. These then, reflexively, supervene back down to influence the lower-level agents” (McKelvey 2004, p.324).*

This model identifies two mechanisms of reflexivity – self-reinforcing perceptions and legitimizing activities.

### **5.2.1. Self-reinforcing perceptions**

As is argued above, the perception of entrepreneurship is imposed by the society. In this form it is a static representation, which conflicts with the dynamic character of social processes. To improve the model a principle of self-reinforcing perceptions is proposed. On one hand, perceptions are imposed by society and on the other hand, individuals collectively form these perceptions. Individuals that have a high preference for one or many perceived aspects of entrepreneurship will become entrepreneurs more frequently. This in turn will enforce the association of said aspects with the entrepreneurial image. If, in a society, entrepreneurship is seen as a highly individualistic, profit-seeking activity, those individuals that lean towards these qualities will choose to be entrepreneurs more often comparative to the rest of the population. This thus contributes to the already established perception. This mechanism is fundamental to the preservation of perceptions, as it allows them to be carried over time. The principle of self-reinforcement also plays a role in social dynamism, as it can link choices by individuals to the society level.

### **5.2.2. Legitimizing activities**

As a self-reinforcing mechanism explained the feedback on social perception, the principle of legitimization explains the feedback on social norms. In an article by Delmar and Shane, the legitimacy of a new venture is defined as “the extent to which people perceive that it adheres to accepted principles, rules, norms, standards, and ways of doing things” (Delmar & Shane,

2004, p. 388). Thus legitimizing activities are the means by which an entrepreneur signals to society that his activity is in line with norms and that his activities are desirable in the host society. As the perception of norms is dependent upon the individual, legitimizing activities create a feedback channel that links the perceptions of norms on the individual level to the level of society, thus changing them in effect.

It must also be noted that legitimizing activities can be targeted at different groups. Using ethical business practices makes an enterprise legitimate on the society level, establishing a legal entity is the signal to government and public administration, and writing a business plan is communicating adherence to norms to potential investors. This behavior is not only normal, but also possibly even more important to enterprises that break away from societal norms. Drug cartels have to build legitimacy by establishing ties with external stakeholders in the form of corrupted officials, politicians and members of law enforcement.

The two links that were explored introduced the mechanism of change through feedback loops. The above model is capable of explaining the formation of individual preferences and the formation of social perceptions. What is missing is the principle by which intentions are converted into the decision to become an entrepreneur. The mechanism behind that is the opportunity cost.

### **5.2.3. Opportunity cost**

By committing to entrepreneurship as a career path, an individual gives up other career choices. This is an opportunity cost of entrepreneurship and it guides the decisions of individuals. The cost is formed in part by individual preferences towards activities. Some

individuals find entrepreneurial activities pleasing while others find them displeasing. Even though some individuals dislike the stressful or chaotic attributes of entrepreneurship, they may ultimately become “accidental” entrepreneurs. This is due to the other side of opportunity costs – the expected value of an opportunity relative to other choices present for an individual. On one hand, individuals with a high preference for entrepreneurship can choose to become an employee if the salary and benefits are of higher value than the potential entrepreneurial outcome. On the other hand, some could be forced into entrepreneurship due to a lack of other options. Hence the analysis of entrepreneurship should consider what other options are present, in order to demonstrate with what entrepreneurship is competing.

So far the developed model has captured the relationship between society and the individual, as well as the relationship between society and the opportunity. It was shown that both entrepreneurship and opportunities are highly contingent upon the given society. Perceptions and norms of a society form individual desires or, more specifically, what is normal to desire in the given society. This aligns the wishes of individuals with the goals of the society as a whole, which is achieved through an institutional matrix. The institutional matrix of a society is a means of communicating norms. This communication of norms structures the behavior of individuals through the use of a mechanism: transaction costs.

However, the model has yet to uncover the key nexus of the entrepreneurship – the link between opportunities and entrepreneurs (Venkataraman & Shane 2000). The framework should be capable of providing a tool to explain the distribution of opportunities. In the model developed so far there is a factor that is yet to be explored: the network.

### 5.3. Networks

As was mentioned previously within the Image of Evolution section, networks consist of a set of actors and the connections among these actors. The introduction of the concept of the network adds a spatial differentiation to the model as well as an additional layer of social and institutional structure. Each actor, be it an individual or an organization, resides in a specific location within the network. Networks are social links and, as actors are more interconnected within some geographic boundaries, they mirror the distribution of actors in a spatial dimension. Indeed, most social links are contained in a district, town, county or other geographic region. Of course there are some truly global actors, and it can be expected that globalization will bring about more connections outside the given geographic boundaries, but this has yet to be observed. Networks are also a product of social and economic processes. The activities of institutions and firms bring together individuals as colleagues, participants and members, thus establishing new links and changing the network. In the case of networks, the society also influences the structure of the network by shared principles: norms, perceptions and institutions.

Networks shape entrepreneurship in two important ways. Firstly, the distribution of opportunities is dependent upon networks. Secondly, the distribution and availability of resources is dependent upon networks. Therefore networks have a decided impact on who becomes an entrepreneur by affecting who is exposed to a certain opportunity and who has the capability to exploit such an opportunity.

### 5.3.1. Opportunity distribution

As previously mentioned, some studies identified the role of the network as shaping the distribution of opportunities (Venkataraman & Shane 2000; Low & MacMillan 1988). Indeed, opportunities become apparent at specific geographical, organizational and institutional locales. There could be an unsatisfied demand for some product in a particular neighborhood; this is an opportunity with certain spatial characteristics. Such an opportunity is most obvious to those who live or work within the region, which forms the social network that resides within the same region. If no one starts an enterprise to satisfy existing demand, then the awareness of the opportunity will spill over to a bigger network, which encompasses the local network. The information about the opportunity will travel along the links between agents.

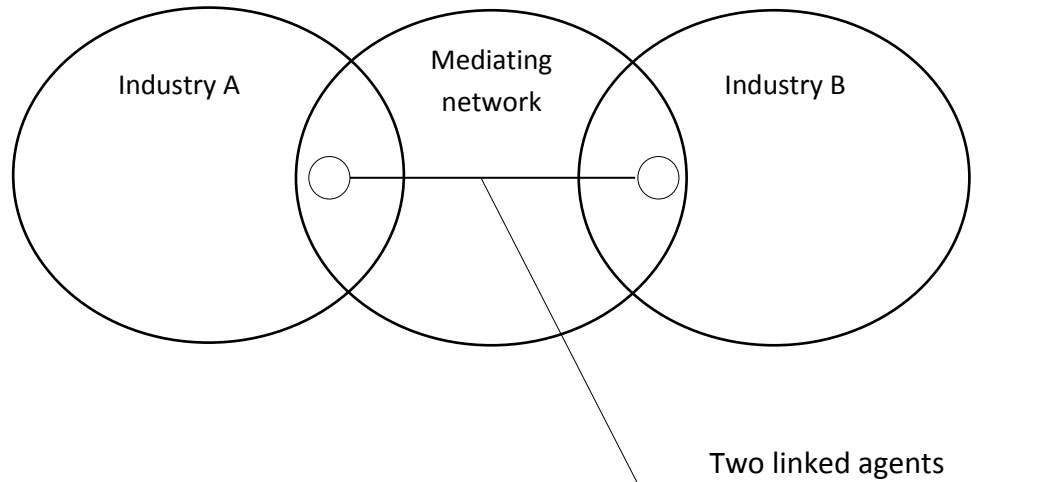
Similarly, in a firm, awareness of an opportunity will be initially localized to a responsibility, a team or a department, dependent on the flow of the information. Therefore some positions in the firm will be more likely to produce an intrapreneur – “developing a new venture from within an existing organization” (Parker 2011, p.20), or a spin-off venture.

In economic terms, a position within a network decides the information cost of the opportunity. Some individuals are located in such positions that they will obtain information indicating an opportunity at no cost by virtue of their job responsibilities (Menzel et al. 2007). It is up to these individuals to decide whether to act on the opportunity, pass it to someone else within their network, or to ignore the opportunity altogether. Furthermore information costs imply that one knows what to look for, while novel opportunities are by nature not possible to formulate before they are observed.



In neoclassical economics, opportunities are available to everyone at the same time (Venkataraman & Shane 2000). The introduction of networks challenges this assumption. A doctor and an engineer come by completely different sets of opportunities based on the industries and organization in which they work. At the same time, they could potentially come by the same opportunity if they live in the same region in which the opportunity is located. The crucial role of the network is increasing awareness of an opportunity outside its original network. This example is illustrated in Figure 2. Industries A and B hold separate sets of opportunities that will mostly be limited to individuals that are located in these respective industries due to prohibitive information costs for outsiders. A mediating network can be any social network (a neighborhood, social or a sport club, alumni organization, etc.) that connects individuals from the two industries.

Mediating networks facilitate information flows between industries, thus spilling over the opportunities to larger networks. As the process is not instantaneous, those in the original locations of the opportunities have an advantage.



*Figure 2: Links between industries through a mediating network*

This mechanism of opportunity distribution by the network can account for patterns in new venture creation better than the idea that the individuals discover opportunities due to “blind luck” (Venkataraman & Shane 2000, p.221).

Moreover networks regulate not only the distribution of opportunities, but also just as importantly, the availability of resources.

### **5.3.2. Distribution of resources**

As previously discussed in the section regarding entrepreneurial intentions, one of the factors in forming intentions is individual capability. Capabilities are contingent on both personal skills and the resources available or attainable for an individual. Markets are often assumed to be concentrated in one point. Networks, on the other hand, imply that resources will be distributed among agents that, in turn, are distributed spatially. Furthermore, the farther away resources are from a potential entrepreneur, the less likely he is to reach out for them due to the associated costs or his unawareness of their existence.

The allocation of resources in a network is differentiated due to the non-homogenous structure of networks. Hence access to resources is uneven across the network and thus the transaction costs associated with the acquisition of resources varies greatly dependent on the link in the network. By introducing the concept of the network to the framework it becomes possible to explain the differences in transaction costs that individuals face. These differences can account for patterns observed in entrepreneurial activities. This explanation is starkly different from previous attempts to attribute elements of entrepreneurial behavior to entrepreneurial personalities.

Developing the argument further, it is not only the distribution of resources that will vary from network to network but the demand for resources as well. At the level of economies this will depend on the degree of development. Global Entrepreneurship Monitor (GEM) distinguishes between three types of economies: factor-driven, productivity-driven and innovation-driven (Global Entrepreneurship Monitor 2015). Economies in each of these categories show unequal proportions of demanded factors.

It can be expected that economies on the technological frontier will require exponentially more human capital than the economies driven by factors of production. On the other hand, in developing economies, higher importance is assigned to social capital. Economies with malfunctioning and underdeveloped markets heavily rely on this type of capital (Benáček 2008). Social capital can be defined as “network, relational or political capital” (Benáček 2008). The degree of endowment of social capital can be based on such network characteristics as size and centrality (Hoang & Antoncic 2003). As a study by Benáček indicates, social capital played a

central role in the early entrepreneurship of countries transitioning from communism (Benáček 2008). Social capital is not a factor of production, but rather it measures how well an individual is connected through networks to resources. When markets are not developed, the society is left without the main tool of coordination according to neoclassical economics. Nevertheless, society is capable of overcoming this situation by leveraging the role of social ties. From this argument it follows that societal networks are the primordial mechanism of coordination and resource allocation. Markets and firms are derived, specialized networks that make the exchange of goods more efficient. This also explains the roles of families in venture creations. The family is the immediate network of an individual and provides direct access to factors of production and skills that are in possession of the family.

In developing economies, networks play an important role in facilitating exchange and providing other benefits, such as security and access to markets. Indeed, a connection to powerful political actors can decrease the risks associated with unlawful expropriation of an enterprise and can be vital for entrepreneurship, thus becoming a substitute for weakly enforced laws of private property in some developing economies. Although it does raise the question of morality, as these connections are often corrupt in nature and tend to unjustly favor the friends and families of political elites.

A different focus is found in economies based on innovation. Technological start-ups rarely rely on the resources or skills of family. They tend to develop connections with investors for financing and connections in the industry and the field of academic research for specific skills. This indicates that the role of a specific network shifts with economic and social development.

Additionally, the concept of the network is capable of explaining the mechanism of knowledge spillover. The Knowledge Spillover Theory of Entrepreneurship suggest that the non-excludable and non-rival nature of knowledge leads to the creation of new ventures (Ghio et al. 2015). Although knowledge is non-excludable, it is accessible to only a limited number of individuals at a time; knowledge cannot be immediately transferred. It takes a large investment of time and effort to develop the skills necessary to fully utilize existing knowledge. To develop new technology, it is necessary to hire a specialist in the field and supply of these individuals is limited. Thus, a connection to a network of specialists, such as a university or a research institution, can be crucial for starting an enterprise.

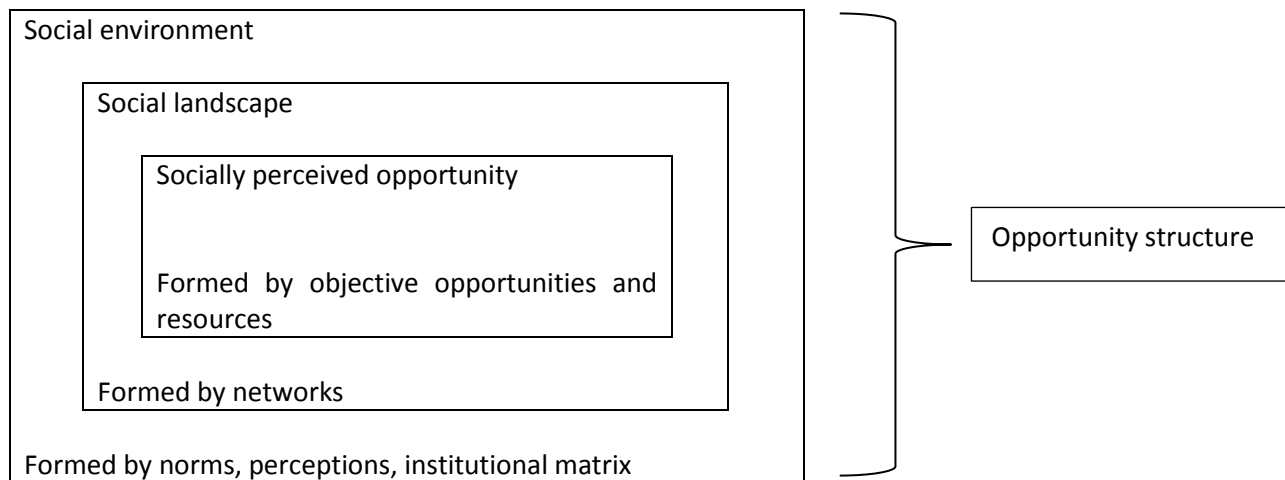
Finally the economic results change the distribution of resources and thus affect the networks. A model developed by Acemoglu and Robinson explain how economic results change distribution of political power. In turn political power affects the distribution of resources and following economic outcomes (Acemoglu & Robinson 2008). It adds the dynamic aspect to networks, as the change in distribution of resources across network changes the distance between actors and resources, thus improving access for some and worsening it for others.

#### **5.4. Society and the entrepreneurial process**

The section on networks focused on the nexus of opportunities and entrepreneurs. Networks further our understanding of transaction costs by introducing structure to society and transferring social structures to markets. One's position in a network relative to resources and opportunities influences the transaction costs that an individual faces. Individuals with favorable locations within a network have an advantage in discovering opportunities as

opportunities are distributed unevenly. Individuals located in favorable networks resource-wise have better capabilities to exploit opportunities.

Integrating the concepts of opportunity structure and networks creates a flexible and inclusive model of interactions between society and opportunities. Until now, this model has shown entrepreneur as a function of this interaction. Figure 3 shows the emerging structure in which entrepreneurial process is located. Norms and perceptions of a society form an institutional matrix that structures the behavior of individuals, thus creating social environment. Individuals are not homogenously distributed in the society; instead they are located in networks that form another layer of structure: the social landscape. Finally, socially perceived opportunities are formed by the distribution of objective opportunities and resources across the networks.



*Figure 3: Differentiated structure of society and formation of opportunities*

In the appendix, the effect of opportunity structure on nascent entrepreneurship is modeled in a two-dimensional network, based on the three different types of economies (factor driven, productivity driven and innovation driven). The model demonstrates how entrepreneurship can be affected by variables related to the importance of each network, position in each network,

institutional matrix, opportunity cost and desirability of entrepreneurship. As the results indicate, entrepreneurial choices are highly related to a plethora of societal factors. This supports the third hypothesis of this paper: current definitions of entrepreneurship are biased by perceptions. These definitions tend to focus on a sole aspect, perceived to be the most important given a specific economic situation: innovativeness in developed economies, management and strategy in productivity-driven economies, and risk-taking and resource-combination in developing economies.

#### **5.4.1. Policy implications**

The model developed thus far is already capable of providing policy advice. It has identified perceptions and networks as contingent variables of entrepreneurial activities. The previous section on networks suggests that the existence of institutions alone is not enough to support entrepreneurship and markets. The value of institutions will be fully realized only if actors have access – connections – to said institutions or markets. For example, laws protecting private property will have a low impact on venture creation if individuals lack access to a judicial system, lawyers and legal advice. Part of policy design should be the creation of links and bridging the gap left by “structural holes” (Hoang & Antoncic 2003) in networks. One research paper by Birley suggests that the presence of institutions supporting entrepreneurship is not enough, as nascent entrepreneurs have no links to these institutions and are unaware of their functions (Birley 1985). Instead they tap into informal networks consisting of family, friends, colleagues and local businesses. Facilitating network building among local actors can be an easily available and powerful tool for revitalizing local economies.

Another explanatory relation is that of entrepreneurship and perception. If entrepreneurship is perceived unfavorably, perhaps due to poor entrepreneurial results in the past, it will decrease the rate at which new ventures are created. It is possible for public policy to address this issue by targeting perceptions. This could be achieved by generating publicity for successful entrepreneurial ventures or by creating platforms for the communication of potential and already successful entrepreneurs. Using the mechanism of self-reinforcing perceptions or in the language of public policy “availability cascade” it could be possible to create more favorable views on entrepreneurship, thus leading to higher desirability. The availability cascade is “a self-sustaining chain of events” (Kahneman 2011), in which results reinforce their causes in the manner of positive feedback loop.

#### **5.4.2. Firm and the society**

Until now, the developed model has concerned itself with the relation between the entrepreneur, society and opportunity. The firm as a method of exploiting the opportunity should also be embedded in the processes of the society, as previously discussed.

Figure 4 shows that the firm should be embedded in social dynamics through the perceptions and norms imposed by society through networks and institutions and, additionally, by the actions of individuals. Therefore, a firm or any other method of exploiting an opportunity becomes a product of both society and the individual. The next step in developing the framework of entrepreneurship is to include the firm.



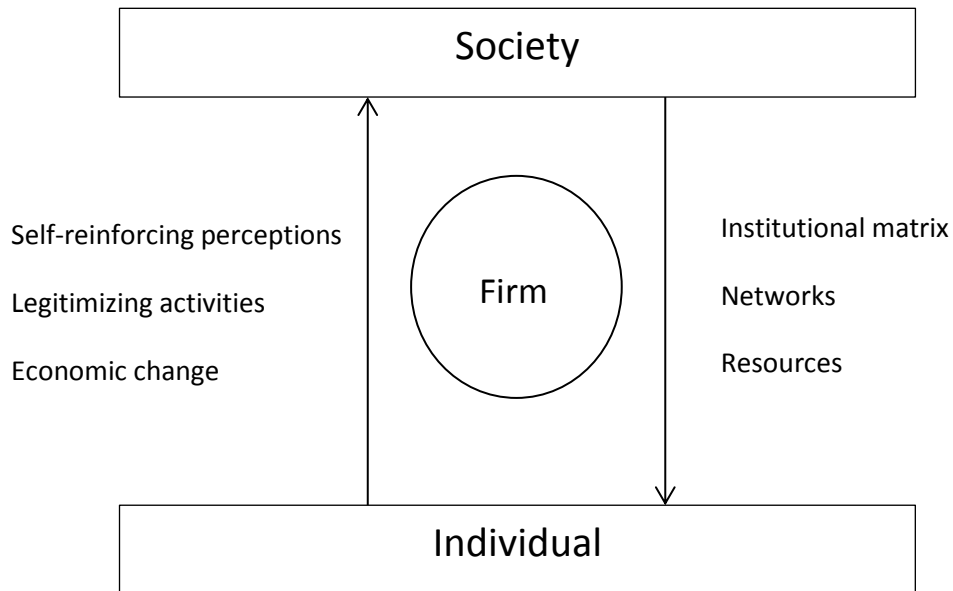


Figure 4: Position of the firm in the social dynamics

## 6. The firm

Up to this point the framework was constructed to capture the entrepreneurial process and focused its attention on the interaction between opportunities, individuals and society. It uncovered the complex interactions between the entrepreneur and opportunities that are due to the differentiated and changing structure of society. In turn, the structure of society is a product of collective action and perception of individuals. Thus, a circular structure of the model emerges, which provides for the inclusion of social dynamics. The firm, or any organization for that matter, finds itself embedded into this environment within its contexts, norms, perceptions, goals and relationship among actors.

Part of the entrepreneurial process or, according to some scholars, the essence of this process (Low & MacMillan 1988; Gartner 1985) are the organizing activities. Therefore, an important task in framework development is to locate the core element of these activities, analyze links to

other system elements, and build an integrated approach that facilitates detailed analysis by explicitly stating links to other system elements.

The purpose of the firm in the classical management theories that were categorized under the Image of the Machines is to control and create patterns in “workers’ behavior within the production process” and keep external and internal equilibria (Nonaka 1988, p.57). These theories develop concepts of business practices with the end goal of tackling uncertainty: a cornerstone element of many entrepreneurial theories (Manne 2014). It is the ultimate purpose of management to decrease the level of uncertainty that decision-makers face in order to:

- Improve the accuracy of predictions (Weick et al. 2005),
- Control variance in production quality for the purpose of continuous improvement (Deming 2007),
- Enable strategic planning by management of “external opportunities and threats” (Audretsch & Kuratko 2009, p.2).

The role of the firm in neoclassical economics is to take on coordination when markets are not able to do so by the means of the price due to prohibitive transaction costs. By exerting control over the production process and continuously monitoring variables, firms are capable of decreasing uncertainty and thus are better at coordination than markets, as the transaction costs decrease together with the level of uncertainty.

Classical management theories preserve the assumption of neoclassical economics regarding the rationality of economic actors. This position can be challenged from at least two angles. Research in the field of cognition challenged the rational-actor model. Rationality as “logical

coherence” is not always observed in the behavior of individuals (Kahneman 2011). Moreover, research in the field of cognitive psychology and organizational science shows that individuals are able to attend to a limited amount of matters at the same time (Kahneman 2011; Weick et al. 2005; Ocasio 1997). This position is often assumed in other studies (Birley 1985; Delmar & Shane 2004), in which venture creation is considered a long process. During this process, the entrepreneur goes through a sequence of multiple steps of organizing, and not simultaneously, due to the limitations of his attention.

Studies that focus on the failures of incumbent firms to recognize and adequately respond to competition identify the reasons behind the “attackers’ advantage”. Research conducted in various industries reveals that many companies fail to respond to competition in their product markets, despite having the knowledge and capacity to do so. The rationale being that companies handle information in a way that they are not paying attention to certain factors.

### **6.1. Limited attention and information filters**

The fact that an individual’s attention is limited challenges the assumption of rationality. Mental activity can require effort and it is possible to exert only a limited amount of effort at a given time. The individual in a firm setting is a decision-maker and this activity involves the exertion of effort, thus it is possible to attend only to a limited range of matters at one time. In the process of creating a new venture the entrepreneur has to engage in a wide range of activities: securing resources and equipment, building a network of suppliers and customers, fulfilling legal requirements, and planning. Observations of venture creation show that the

entrepreneur focuses his attention on these activities in a sequence and not simultaneously (Birley 1985; Delmar & Shane 2004).

To accommodate this idea, Ocasio suggests an attention-based view of the firm (Ocasio 1997). According to this view, in each firm there is an established attention structure – a mechanism to allocate the attention of an individual “in the context of the firm’s activities and procedures”, along with the associated repertoire of issues and action alternatives (Ocasio 1997, p.189). A firm’s routines, procedures and policies distribute issues to decision-makers and also provide them with a toolset to act upon these issues.

Scholars argue that part of this attention structure is information filters (Kaplan & Henderson 2005; Henderson & Clark 1990) or “information corridors” (Venkataraman & Shane 2000). These filters are a means of screening an infinite set of information in order to narrow them into “actionable knowledge” (Weick et al. 2005). But how do firms choose what information to filter out? Scholars suggest that after some experimentation with an innovation, the firm settles on a dominant design of product (Christensen & Rosenbloom 1995; Henderson & Clark 1990). This notion can be further extended to all operations that constitute the dominant business model. Product design is based on the components, or the elements of the product, and also on the architecture, or the way the components are combined. In the same way, the business model is based on processes and the way in which they interact with each other. After the dominant product design or a business model emerges, firms tend to shift their limited attention to building competence in regards to the chosen architecture and components. The attention structure reflects that:

*“The focus of active problem-solving becomes the elaboration and refinement of knowledge about existing components within a framework of stable architectural knowledge” (Henderson & Clark 1990, p.4).*

The issue categories and problem-solving strategies associated with a given business model and product design, as well as the range of relevant information, becomes embedded in the firm’s structure and operations. It is reflected in the firm’s routines, policies, instructions, etc. Some of the most striking examples of the adverse effects of this limited focus of firms are found in industries that have undergone radical changes due to architectural innovation. One article “Architectural innovation” by Henderson and Clark showed how incumbent firms in the industry of photolithographic aligners overtook the market one after another, because each new dominant firm failed to recognize the value of an architectural innovation (Henderson & Clark 1990). Teams of engineers had extensive knowledge of each component in the emerging design of a competitor, but failed to recognize the advantages of these designs. Henderson and Clark attributed this to the difficulties experienced in changing the focus of attention towards new issues – the inertia of an incumbent firm induced by its attention structure:

*“But Kasper’s very success in designing contact aligners was a major contributor to its inability to design a proximity aligner that could perform as successfully as Canon’s... ...more importantly, the architectural knowledge that Kasper has developed through its experience with the contact aligner had the effect of focusing its attention away from the new problems whose solution was critical to the design of a successful proximity aligner” (Henderson & Clark 1990, p.25).*

Similar effects of information filtering and attention focusing were found in value chains that the firm itself is a part of. In one article, “Explaining the attacker’s advantage”, Christensen and Rosenbloom showed how firms in the disk drive manufacturing industry were building competence in their value network, comprised of suppliers and customers. They found that some knowledge produced in the industry was not relevant to the product as it improved qualities that were not important to customers. The needs of customers are formed by their own product architecture, which reinforced the dominant design of disk drive manufacturers, which in turn passed the component requirements onto their suppliers (Christensen & Rosenbloom 1995). When the accumulated and underutilized knowledge found its way to a new value network, it radically changed the landscape of the industry. Incumbent firms had been focusing their attention and competence on the computational capacity of large corporate information systems, largely disregarding the possibility of decreasing the size of said systems. It reached the point where the existing knowledge created a new industry of desktop computers that traded efficiency in favor of size (Christensen & Rosenbloom 1995). As Christensen and Rosenbloom summarize:

“These phenomena support the widespread observation that technical progress is largely path dependent – that established firms are more likely to search in zones that are closely related to their existing skill and technologies” (Christensen & Rosenbloom 1995, p.237)

## **6.2. The path dependency**

Path dependency is a quality of a process, in which “initial moves in one direction elicit further moves in that same direction; in other words the order in which things happen affects how they

happen” (Kay 2005, p.553). Path dependency in firms arises from the ways that firms handle uncertainty. Given the dominant design and business model (this excludes new ventures, which are assumed to be experimenting) of the firm it looks for a means of decreasing costs. The firm seeks to achieve operational excellence – to increase returns on the invested capital and thus create value for shareholders. To achieve this, costs are decreased and quality is improved. As attention is limited, the first priority is to direct it to the task specified above. Thus actors in the firm focus on building competence around existing processes and products. Established priorities regarding attention and information become embedded in business practices, starting with routines and ending with the mission and strategy of a given company.

By increasing the competence and knowledge of processes, the firm can arrive at a better estimation of the value of each factor, decreasing the uncertainty associated with these values. Therefore, the firm plays the role of coordinator by decreasing the attention, information and knowledge costs that are necessary to evaluate the true price of the factor.

Path dependency is the result of the choices made regarding product design, components, suppliers, customers and factors of production. Changing these choices is costly, because it requires dealing with lesser-known alternatives, which incur higher transaction costs. Furthermore, it requires the redesigning of processes within the firm, which leads to more costs.

Individuals interacting within a firm will engage in the immediate design of processes where “users' explicit and implicit needs are the immediate reasons to which the design responds, rather than a global trend, business strategy, or technical opportunity” (Keinonen 2009, p.69).

Changing the structure of the firm requires changes in a set of established goals and business practices – a task for remote design that creates “infrastructure, conceptual, methodological, or resource-related foundations for others regulatory, competence, to develop products or local practices” (Keinonen 2009, p.71). Redesigning existing structure from the position of an insider is difficult, and an outsider with the same knowledge as the insider would be more capable of creating a process or a firm, as an outsider is not constrained by existing structure. This advantage is one of the sources of opportunities – exploiting valuable options that incumbent firms are prohibited from exploiting, due to the existing structure – path dependency. This is one of the main reasons for the existence of the consulting industry; consultants take on the role of an outsider for corporate clients in order to renew processes and the structure of client firms.

So far this study has concerned itself with the incumbent firm, which has developed a dominant product design and business model. To come closer to the entrepreneurial process, it is necessary to explore the process by which the structure of the new venture emerges.

### **6.3. Sense-making and Identity**

The creation of a new venture gives way to an organization characterized by blurred boundaries between responsibilities, roles, tasks and goals. Although the new venture may have a shared vision of its purpose, it is not embodied in the structure of the firm and thus it is heavily affected by individual actors within the firm. Furthermore, actors outside of the firm do not know what the firm’s future will hold, as it is highly uncertain even for those within the firm.



Thus the organization finds itself in flux; there is not only high uncertainty regarding operations, but just as importantly, the way the firm perceives itself is highly ambiguous.

Weick proposed a mechanism that individual actors use to deal with ambiguity and uncertainty – sense-making, which “is a search for meaning as a way to deal with uncertainty” (Weick et al. 2005, p.414). When presented with the unknown, an individual will try to comprehend the situation and give it meaning to reduce uncertainty. The individual then “talks events and organizations into existence” (Weick et al. 2005, p.413), a process that links new situations to previous experiences, explicitly stating the link and communicating it to other actors. Existing organizations often eliminate the need of actors to make sense out of situations, as they present them with categories of issues and solutions that can explain a situation.

Of course sense-making does not create a completely true narrative about the encountered, unknown situation – “it is about continuous redrafting of an emerging story so that it becomes more comprehensive, incorporates more of the observed data, and is more resilient in the face of criticism” (Weick et al. 2005, p.415). It is about creating a sense of validity. “Extreme uncertainty is paralyzing under dangerous circumstances. [...] Acting on the pretended knowledge is often the preferred solution” (Kahneman 2011), and the sense of validity can “keep things moving” (Weick et al. 2005, p.415). Although sense-making produces stories that are not fully true, this pretended knowledge can sometimes be more suitable than an unbiased acknowledgment of uncertainty. Finally, the perceived meanings are enacted between actors through activities of the firm under conditions of uncertainty; the range of possible meanings of the situation is narrowed until one is selected, adopted and retained (Weick et al. 2005). This

constitutes the micro process by which actors create ways of identifying the situation, as well as appropriate means of decision-making. These constructs are then retained, becoming embedded in the processes of the firm, thus creating an attention structure.

Finally Weick argues that sense-making contribute to the creation of identity. As he argues, “who we think we are as organizational actors shapes what we enact and how we interpret, which affects what outsiders think we are” (Weick et al. 2005, p.416). Indeed, roles and positions in a given society are constructed, “insofar as they are based on representations of the Other in terms of which the posture of self is defined”, where “the Other is the socio-psychological form of that abstraction that sociologists and anthropologists call social structure” (Wendt 2001, p.216). What the firm is lies in the hands of outsiders, because the identity of one’s self is defined in relation to others.

The mechanism by which identity is created is essential to a new venture. Establishing a new firm is an attempt to communicate a new meaning (opportunity) to others (the society). This process goes through a number of iterations that stabilize the identity of the firm. Practically it means that new firm proposes an innovation to a market as a plausible meaning of uncertain knowledge. The market (the others) in turn shapes the identity of the firm by demand or lack of it for the innovations that the firm is marketing. The market response informs the firm of its identity, its niche in the market and its position in the networks of the society.

Now it is possible to link the model in the previous chapter with the firm. An entrepreneur engages in legitimizing activities to communicate to the market and society his perception of opportunity (sense-making) and society reacts by showing interest for an idea or condemning it

(shaping of the identity by others). The entrepreneur and society jointly develop the entrepreneurial idea through a cycle of drafting business plans and product prototypes (in the case of the entrepreneur) and reacting to them (in the case of society).

Finally, if the entrepreneur feels capable of exploiting the opportunity given the reaction of others, he starts a venture. After which, the venture shapes its identity through interactions with the market. Demand, suppliers and customers all contribute to developing the identity of the firm and its position in the network, thus affecting how actors in the firm behave. At the same time, within the firm the search for a dominant business model and a dominant product design takes place.

Sense-making is a micro foundation for the functioning of an entrepreneurial firm. Building the identity takes place between the firm and the society. It is a cycle in which the identities of multiple firms are aggregated at the market level, which informs new firms of their identity. It is a continuous process in which markets and firms are constantly changing each other. A similar process occurs in the interaction of the individual actor and the firm. By engaging in uncertainty and proposing a narrative to explain it, individuals in the firm gradually form the routines of the firm, its selection of analytical categories, strategies and problem-solving tools. The principle of self-reinforcing perceptions is at hand here – the structure of the firm instructs actors of their roles and tasks. When an actor encounters a new situation, he tries to make sense out of it and communicate it to his colleagues. This process changes the structure of the firm, thus completing the cycle.

## 6.4. Defining entrepreneurship

Finally, it is possible to build the integrated framework of entrepreneurship out of the elements presented in this thesis. As it was shown, entrepreneurship is socially constructed and opportunities depend highly on both the society and the individual. Therefore, the concept of sense-making is proposed as a micro-level principle of individual cognition.

Sense-making is contextual and can accommodate all varieties of social norms and perceptions. In this way, sense-making can be employed by individual to engage uncertainty. This concept can be applied universally, for example it is equally successfully in explaining how opportunities are perceived and made sense of in both ancient Rome and the modern capitalist market:

- “I do not know how big the army of our neighbors is but with this new tactic we can surely defeat them”.
- “I do not know how many people would like to have their own computer, but if we make the computer small enough to fit on the table, it will be in demand”.

Furthermore, it connects the individual with society, the individual with the firm, and the firm with society:

- The individual and society: as an individual recognizes an opportunity, he frames and articulates it in a way that will seem desirable to society. In other words, the entrepreneur engages in legitimizing activities
- The individual and the firm: Individual actors recognize new problems or issues, construct an explanation and communicate it to other actors in the firm

- Society and the firm: a firm's activities, stemming from sense-making at the level of the individual actor in the firm, are reflected in the perception of the firm by external actors, thus forming the firm's identity

From this point of view, the creation of meaning is formed at the nexus of the entrepreneur and opportunity. The entrepreneur must not only recognize the opportunity, but also present it as plausible to the society and redraft it based on the society's reaction. Opportunities hide in uncertainty; engaging the uncertainty through the process of sense-making uncovers these hidden opportunities.

The process of meaning creation establishes a chain of feedback loops:

- The individual and society: the individual interprets the norms of society and frames a new meaning accordingly, while incorporating his perception of the norm, which in turn changes the norm itself
- The individual and the firm: an individual presented with an unknown situation invents a plausible explanation and improves upon the problem-solving tools available to him in order to fit the explanation
- Society and the firm: the firm defines its identity based on the perception of the market, which changes the perception of the market and causes further change of identity

These interactions can cause a positive feedback loop – a process in which results reinforce the causes. When the innovation is first introduced to a market it creates uncertainty for participants, which leads them to rewrite their business models to accommodate this new innovation and better reflect the new market. As actors adapt their views, there are changes to

the initial definition of innovation and how actors perceive each other. Thus, a change in society can cause a cascade of new meanings causing a “phase transition” – a nonlinear change (Meyer et al. 2005). This process has the potential to create and sustain novelty – one of the central aspects of entrepreneurship:

*“Autocatalytic loops can appear when a change in the state of an agent causes the same change in other individuals (contagion). Particularly interesting forms of autocatalyticity are the instances where the effects are enhancing their own causes. Such logically circular structures have in principal the potential to generate novelty, creativity and free will by initiating self-referential loops (e.g. systems reacting on their own components) that transcend the initial logical set-up”*(Solomon & Golo 2014, p.1686).

Thus the process of meaning creation is autocatalytic – it enhances its own causes and induces a change in other actors, thus introducing social and economic dynamism to the framework.

At last the meaning is preserved in the structure of the firm. The process initiated by an entrepreneur goes through a phase of organizational evolution and self-organization in which actors are guided by formed identities. These identities are associated with the opportunity that a firm exploits, guiding actors within a firm how to make sense out of uncertainty regarding the means of achieving a goal, suggesting an explanation, collectively selecting a response and retaining it by embedding it in the structure of the firm – the rules by which it operates.

Entrepreneurship therefore is *an autocatalytic process of creation of meaning and the consequent retention of said meaning in the structure of a new venture*. In this framework the

entrepreneur is an individual that, given his host society and his network, finds new meaning in uncertainty and creates an organization to bring this meaning into reality.

## 6.5. Research tools

As contributions to the field of entrepreneurship suggest, the general linear models are not a good fit for the explanation of organizational change and entrepreneurship (Meyer et al. 2005). Development of qualitative and broader models is necessary to include social context, nonlinear change, and path dependency.

As previously shown, firms are path dependent. An emphasis on the history of the firm requires the introduction of an arrow of time, where the sequence of events is important. Contrary to this view, the notion of equilibrium in neoclassical economics can move in either direction regardless of the history of its movement (Denis 2006). The physical law that establishes the arrow of time is the second law of thermodynamics according to which “any physical closed system tends toward the most probable equilibrium state: the state of maximum entropy” (Solomon & Golo 2014, p.1688). Markets that reach equilibrium according to neoclassical economics are comprised of homogenous firms. Markets do not reach maximum entropy, but rather stop at the level of order found in the firms comprising the market. Furthermore one can observe markets that are constantly changing and evolving. Ilya Prigogine introduced the concept of “dissipative structure” to explain why real systems do not devolve into entropy. Dissipative structures are open systems that export order from the environment (McKelvey 2004) thus escaping the heat death.

In this view, the firm is a dissipative structure that exports high-order inputs, or resources, to maintain its functioning. This view considers incumbent firms as energy conserving systems, due to their focus on decreasing costs. Energy conserving firms do not create additional order; instead they aim to maintain existing levels of order in their structures.

Changes in the environment or to innovations that lead to the importation of more order than previously create opportunities, which are “energy differentials” (McKelvey 2004; Lichtenstein 2009). Entrepreneurs, in an attempt to exploit an opportunity, initiate an autocatalytic process that can make other actors change, thus leading to a phase shift. This new position requires the organizations to change structures and identities leading to new forms or levels of order.

Some scholars have argued for the inclusion of thermodynamic principles to economics starting with the works of Georgescu-Roegen (Rosser 1999). Recently, it was the scholars from the field of complexity studies (McKelvey 2004; Lichtenstein 2009) that suggested new approaches to fields such as entrepreneurship research. At the same time the field of complexity studies is in flux itself and does not have unity in perspectives (Rosser 1999).

Entrepreneurship, the creation of structure or order by engaging in a search for meaning in uncertainty, cannot be properly studied by existing research tools such as general linear models with homogenous actors. This is the third proposition of the paper. Entrepreneurial phenomena are associated with path dependency, nonlinear change, and social dynamics and therefore scholars need new research tools. Qualitative, longitudinal studies and models based on heterogeneous agents show a lot of promise (Meyer et al. 2005) as they can better capture dynamics and complex social contexts of decision-makers.



Departing from general linear models and rational agents to build better entrepreneurial theories could be beneficial, though scholars must be cautious:

*“Richer and more realistic assumptions do not suffice to make a theory successful. Scientists use theories as a bag of working tools, and they will not take on the burden of a heavier bag unless the new tools are very useful”* (Kahneman 2011).

## 7. Conclusion

This thesis aimed to develop a framework of entrepreneurship based on a synthesis of prior contributions of various streams in entrepreneurial research. An analysis of these contributions uncovered the fragmentation of the field of entrepreneurial studies. Various perspectives developed in the field appeared to be irreconcilable as they were grounded in highly differing views on the nature of society, markets, firms and individuals. This warranted the creation of a unified paradigm, capable of combining approaches and building upon existing contributions.

The research conducted in this paper produced the following definition of entrepreneurship: *“an autocatalytic process of creation of meaning and the consequent retention of said meaning in the structure of a new venture”*. This definition can be used in any of the streams by changing the weight or importance of any of the elements (auto-catalytic process, meaning creation, retention in structure) corresponding to different perspectives.

Creation of meaning is the discovery of an opportunity in an uncertain situation. As an entrepreneur and an opportunity are located within an institutional matrix and a network structure, the newfound meaning contains the norms and contexts of society and the

preferences and perceptions of an individual. This definition is more advanced as it includes research that highlights the importance of the social nature of entrepreneurship and opportunities. In some studies, such as those within management theory, this part of the definition plays a lesser role, but nevertheless forces the researcher to explicitly state which network and institutional structure the study concerns. This quality of the definition requires an explicit statement of the setting in which the entrepreneurial process is studied, including the level of development, culture, norms, perceptions, resources and networks. Thus the creation of meaning is conceptualized as localized opportunity recognition, in which opportunity and the entrepreneur are dependent on society and the network in which the entrepreneurial process takes place.

An autocatalytic process can also be framed according to perspectives in these studies:

- As social dynamics and change within the Image of Social Becoming
- As complex cognitive patterns and heuristics such as availability cascades within the Image of Mind
- As the emergence and creation of order, or novelty arising from actors reacting to each other and amplifying the process, within the Image of Contingencies
- As the adaptation of organizations as a part of evolutionary process within the Image of Evolution
- As market dynamics in the face of uncertainty within the Image of Machines

This allows the framework to capture approaches of various streams towards change.

Retention in structure is a method of exploiting the opportunity. For management theories the structure is a set of business practices, for complexity studies it is the dissipative entities, while for psychology structure is shared cognitive patterns of a firm. All three elements of the framework capture the relationship between such concepts as uncertainty, opportunity, novelty and venture creation.

The framework developed in the thesis includes the key aspects identified in the previous entrepreneurial research. Therefore it is a valuable foundation for policy and research design, as it shows the links between previously fragmented concepts within the field of interest. This new framework will allow policy designers to more effectively stimulate entrepreneurship in ways that promote economic development. The ability of the framework to recognize differences between entrepreneurs within diverse cultural and economic settings is essential in designing country appropriate policies.

As researchers have previously focused their attention on specific models and approaches, such as linear models with homogenous actors and quantitative studies, they have limited research to only a few key components. Contemporary research enriched the concept of entrepreneurship with a plethora of new constructs, which to date are underutilized in research programs. The proposed definition integrates these contemporary elements into a new framework, which stimulates the use of multidisciplinary and multilevel approaches to comprehend the entrepreneur's role in socio-economic change.

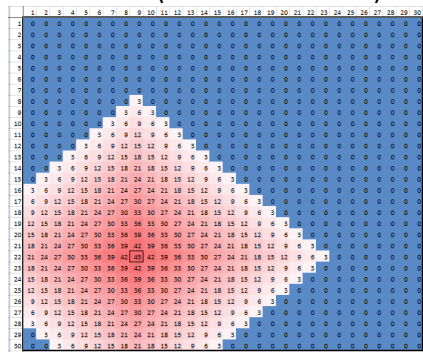
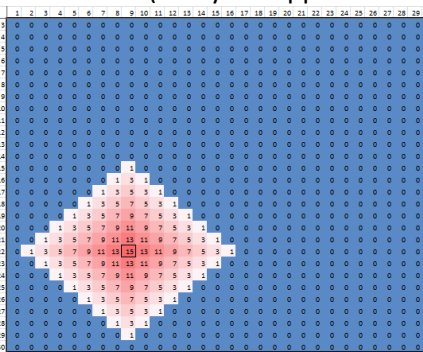
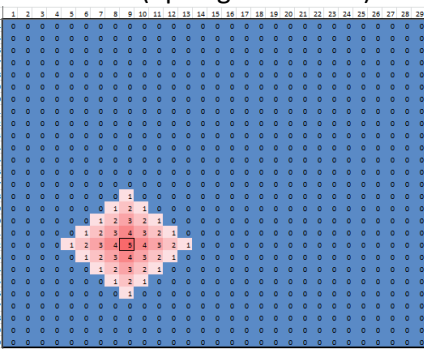
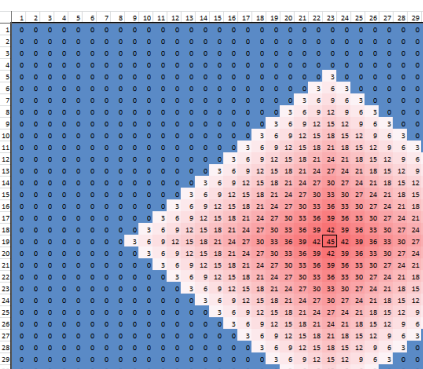
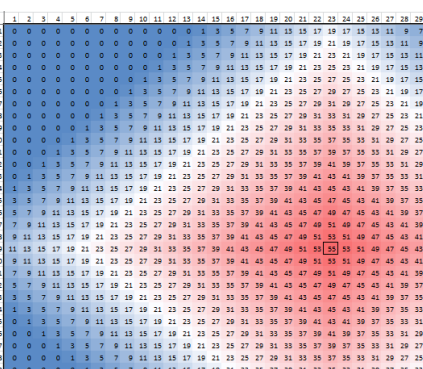
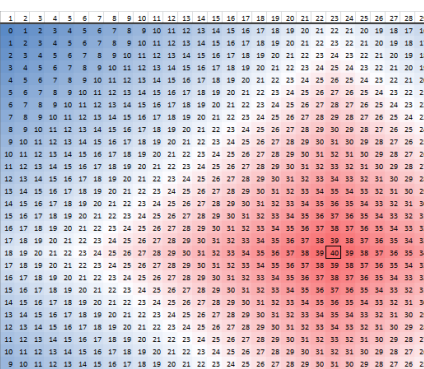
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# Appendix: Modelling the impact of structure in society on nascent entrepreneurship

Factor driven economy	Productivity driven economy	Innovation driven economy
<p>The importance of resources for an opportunity (value) and the extent of links in a society (distance):</p> <p><b>Political:</b> ties to political elite, lobbyism, corruption</p> <p><b>Capital:</b> access to financial capital and factors of production</p> <p><b>Knowledge/human capital:</b> access to knowledge and skilled employees</p>		
<p>Value: how important resources are for starting a venture out of 100%</p> <p>Distance: function of transaction cost at each link (increase is linear) relative to center, minimum 0</p>		
<p>Political: 45 % Transaction cost: 3 (entrenched elites)</p> 	<p>Political: 15 % Transaction cost: 2 (lobbyism opportunities)</p> 	<p>Political: 5 % Transaction cost: 1 (open government)</p> 
<p>Capital (factors of production): 45% Transaction cost: 3 (underdeveloped markets)</p> 	<p>Capital (factors of production): 55% Transaction cost: 2 (developed markets)</p> 	<p>Capital (factors of production): 40% Transaction cost: 1 (transparent, global markets)</p> 





### Impact of institutions on network distribution

#### Impact of institutions modeled as a multiplier to value of resource

Politics: 1.5 (laws favoring political elites)  
Capital: 0.7 (low protection of private property)  
Knowledge: 0.5 (lack of patent laws)

Politics: 1 (better judicial system)  
Capital: 1.2 (laws stimulating investment)  
Knowledge: 0.7 (low support for universities)

Politics: 0.5 (exclusion of politics from economy)  
Capital: 1.8 (established framework for corporate investment)  
Knowledge: 1 (well supported universities)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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21	12	16	19	22	25	28	31	34	36	39	41	42	44	46	47	49	51	53	54	56	58	59	61	63	64	65	63	60	57	54
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27	12	16	19	22	25	28	31	34	36	39	41	42	44	46	47	49	51	53	54	56	58	59	61	63	64	65	63	60	57	54
28	12	16	19	22	25	28	31	34	36	39	41	42	44	46	47	49	51	53	54	56	58									

For all networks the given opportunity is located in ths cell and decreases at a constant rate with the growth of distance

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

### Model of nascent entrepreneurship in the network

Individuals between economic and political centers are in the most favorable position to act on a given opportunity regardless of the position in respect to the opportunity, based purely on resource endowment

The ability to act on the opportunity is more evenly distributed across the network with limited advantage given to the individuals between opportunity and political centers

A smooth opportunity distribution across the network with a high degree of granulation due to abundant career options that increase opportunity costs

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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