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The Fabric of Regional Entrepreneurship: Creating the Multiplier Effect

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Introduction

There have been many stories about regional economic development in the last couple of decades. Some of these point to drivers in history or technology, others to the geography of industrial clusters or the geometry of network organizations, and yet others to the evolution of organizational forms such as flexible specialization, etc. All these explanations, to a greater or lesser degree, acknowledge the relevance and importance of entrepreneurs to the development process. Some have argued for the existence of entrepreneurs as the prime mover of the process; others have pointed to policy incentives that have fostered entrepreneurs in the first place. We also offer a story with an entrepreneurial slant, but our story has a different logic to it – we hope the difference is large enough to provoke exciting new threads in the conversation, but not so large that we throw away insights we have collectively gleaned so far.

We are also not suggesting that our story is better or more accurate, but just that it sheds some light on some issues that the field may not yet have considered. In a nutshell, we will argue for governments and regions to move beyond seeing entrepreneurship as a way of promoting jobs and creating new (mostly small) businesses and think of it instead as a mind-set and method that *all* participants in regional economic development can use to contribute to the well-being and progress of their countries and regions.

Much like the phenomenon of “organizations” and “organizing” transformed the 20th century social landscape, it is possible that “entrepreneurship” could be seen as the transformation agent of the 21st century. In thinking through this conceptualization of entrepreneurship as a method available to society to solve human problems and to usher in social and economic change, we will briefly touch upon history and theory, but our focus will ultimately be pragmatic rather than theoretical. Throughout our exposition we will emphasize system-level aspects– i.e. the fabric of regional entrepreneurship as a whole -- and not worry about more familiar arguments about the individual or institutional aspects of the phenomenon.

Regional entrepreneurship: Historically speaking

There has been considerable interest in regional entrepreneurship over the last 15 years or so - especially since the entrepreneurship-driven technological boom in the 1990s led by Silicon Valley in the United States. Every major trend in economic development, and even recent developments in economic scholarship, attest to the fact that entrepreneurship has captured the imagination of people around the world. Political, university and business leaders already treat entrepreneurship as a means to economic and social development. This insight that entrepreneurship can lead to successful regional growth has found considerable positive

evidence across the world – in India, Ireland, Taiwan, Israel, Korea, and Singapore, to name a few.

In the last decade governments in many countries have made it easier for entrepreneurs to start new businesses and found new companies. For example, according to data collected by the Global Entrepreneurship Monitor (GEM an academic consortium of university based experts from about 50 countries around the world), the average time taken, steps needed, and the upfront fees and expenses to incorporate a new company has been steadily falling over the last few years in most of the countries tracked. Further, several countries have started venture funds and have set aside risk capital to finance entrepreneurship. University based incubators have also been a growth industry across many countries. Furthermore, knowledge about entrepreneurship and even technical jargon among bureaucrats has steadily increased. States and regions within countries even compete with each other to attract new companies and to provide a more hospitable business environment for new entrepreneurs. In the GEM data, countries like Mexico and even Indonesia appear at the top of the list of entrepreneurial economies – countries you would not normally associate with being very entrepreneurial.

However, it must be appreciated that when we measure entrepreneurship we usually measure it around new business start-ups. As a result, it is easier to start a company today than it was, say, in the eighteenth century. Yet it remains far easier to start a company than to grow it into a transformative force in society. It is far easier to promote the start-up of companies, but it is far more difficult to help scale individual companies or scale enough companies to have lasting and transformational impact within the region. It is easy to provide incentives for the creation of small businesses, but incentives do not in themselves lead to the creation of a Google, or a Grameen Bank, a Creative Technologies in Singapore or Infosys in India. Similarly, it is easy to set up an incubator in an area, but more difficult to create a Bangalore or a Dublin, or a Singapore.

The next challenge in entrepreneurship – both theoretically and practically – is for regions and states to move from promoting entrepreneurship to creating a vibrant entrepreneurial economy that can produce region-changing (or perhaps even world changing) companies. This transition from the logic of creating companies to nurturing a fabric of entrepreneurship is akin to moving from - to use that evocative phrase of Napoleon – “from a nation of shopkeepers” to a society of entrepreneurs (in the broadest sense of the word). Just as building an enduring pottery company in eighteenth century England entailed the construction of an entire socio-political ecology, so does the making of an enduring high-growth

company today require the weaving of a comprehensive fabric of regional entrepreneurship. Let us undertake a thought experiment to illustrate this notion before we build it into a workable thesis.

Entrepreneurship as a system-level phenomenon: Two time travel tales

When John Wesley, founder of the most successful religious movement (Methodism) in eighteenth-century Britain visited the potteries of Burslem in 1760, he had to travel on non-existent roads and had to endure being pelted with mud during his sermon by local inhabitants who could only be described as brutal and vicious. Revisiting the same place in 1781, he wrote in his diary (Smiles, 1894: 325): *1781, March 8th. I returned to Burslem. How is the whole face of this country changed in about twenty years! Since which, inhabitants have continually flowed in from every side. Hence the wilderness is literally become a fruitful field. Houses, villages, towns, have sprung up: and the country is not more improved than the people. The word of God has had free course among them; sinners are daily awakened and converted to God, and believers grown in the knowledge of Christ. In the evening the house was filled with people, and with the presence of God. This constrained me to extend the service a good deal longer than I am accustomed to do.* Both Wesley and historians point to the achievements of the entrepreneur Josiah Wedgwood as the prime mover in this remarkable transformation. Born in a humble family of potters in Burslem, Wedgwood not only built a pottery company that lasted over 200 hundred years, he created a brand that is part of bridal registries today. He also built roads and canals, lobbied the British Parliament to pass Acts favorable to his region, counted luminaries such as James Watt, Mathew Boulton and Sir William Hamilton among his friends and became a Fellow of the Royal Society for his invention of the pyrometer and for other scientific papers. Wedgwood also figured out for himself the nuances of variable cost accounting and designed numerous business process innovations including the predecessor to the punch-clock that helped transform worker-behavior .

More recently, Thomas Friedman (2005: 3) describes his travels in *The World is Flat. No one ever gave me directions like these before on a golf course: "Aim at either Microsoft or IBM."* *I was standing on the first tee on the KGA Golf Course in downtown Bangalore, in southern India, where my playing partner pointed to two shiny glass buildings off in the distance, just behind the first green. The Goldman Sachs building wasn't done yet, otherwise he could have pointed that out and made it a threesome. HP and Texas Instruments had their offices on the back nine, along the tenth hole.* Friedman (2005: 5-6) also describes his visit to one company at the center of twenty-first century Bangalore: *The Infosys campus is reached by a pockmarked*

road, with sacred cows, horse-drawn carts, and motorized rickshaws all jostling alongside our vans. Once you enter the gates of Infosys, though, you are in a different world. A massive resort-sized swimming pool nestles amid boulders and manicured lawns, adjacent to a huge putting green. There are multiple restaurants and a fabulous health club. Glass-and-steel buildings seem to sprout up like weeds each week. In some of those buildings, Infosys employees are writing specific software programs for American or European companies; in others, they are running the back rooms of various American- and European-based multinationals – everything from computer maintenance to specific research projects to answering customer calls routed there from all over the world. The explanation this time around, however, is not based on the achievements of any one heroic entrepreneur, but instead on the flattening of the earth through technology, education and the socio-political development of an entrepreneurial culture based on free market principles – at least in those pockets of almost renaissance-like regional prosperity that have sprouted in various unlikely locations around the world.

Regional entrepreneurship: Tempus and Hora

Theoretically speaking, it is difficult to attribute such regional terra-forming merely to individual genius or even to policy initiatives and directed incentives. Something more fundamental appears to be at work here – a type of specialization in key entrepreneurial activities that evokes Adam Smith’s pin factory and Herbert Simon’s architecture of complexity, albeit in a newly incarnated version that has exciting possibilities for our intellectual endeavor in this essay.

Division of labor is an old concept – yet its rebirth seems imminent in the future history of regional entrepreneurship. In conventional business corporations, specialization typically encompasses sales, finance, accounting, marketing, operations, information systems, and the like. Or it might take the form of value chain specialization involving both upstream and downstream activities. One of the great co-evolutions of the industrial revolution was the parallel organizational structural evolution along functional lines, which allowed specialization and speeded up growth as well as industrial and technological innovations. It also increased the fundamental capacity of organizations and regions to grow. As George Stigler, an eminent economist of an earlier era and a Nobel Prize winner pointed out: “the division of labor is not a quaint practice of eighteenth-century pin factories; it is a fundamental principle of economic organization” (Stigler, 1951: 193).

But Stigler also pointed out that the division of labor so essential for growth is limited by the size of the “market” – or for our purposes the size of the entrepreneurial sector. Without a large enough entrepreneurial activity, it is difficult for specialization within the entrepreneurial sector – hence division of labor to occur. This in turn will limit growth. Thus we have a conundrum: without growth to a large enough size we will not have specialization. Without specialization, growth to a large enough size will be limited. The hallmark of a primitive or nascent entrepreneurial region is that the founding entrepreneur or entrepreneurial team provides many of the required skills for building and growing a company from founding to impact – the entrepreneurial sector is vertically integrated within the founding entrepreneurial team. These skills are concentrated in a small number of people or communities who learn these processes as they go along (or come from a small, intertwined, and highly networked community). Often the identity of the venture firm is tied up with the founding two or three members, as in the case of Wedgwood and Bentley. And as Wedgwood realized, when these skills are not present systemically or systematically within the local economy, it takes heroic efforts to grow them from scratch. Although heroic entrepreneurs such as Wedgwood in England, Hershey in Pennsylvania, and Kirloskar in India have time and again worked to weave the fabric of entrepreneurial specialization and regional development beyond functional specialization in the conventional sense, their efforts are yet to be generalized into our understanding and practice of developmental economics. Specialization in primitive or nascent entrepreneurial societies continues to be more along functional or disciplinary lines, not along the lines necessary for taking an idea to market or to fabricate new markets from existing resources and resourcefulness. This concentration of core but diverse skills necessary for building an enterprise in the hands of a few people fundamentally affects the ability of a region to grow rapidly, and turns into a vicious cycle: small markets means that specialization cannot occur, lack of specialization limits the growth of the market.

To illustrate this idea of specialization leading to faster evolution of a system let us turn to yet another Nobel Prize winning economist, the late Herbert Simon and his concept of the architecture of complexity (Simon, 1962). In his seminal essay on the topic, Simon showed that complex systems would evolve from simple systems more rapidly if there are stable intermediate forms than if there are not. He illustrates this with a simple parable, which I will use here.

“There once were two watchmakers, named Hora and Tempus, who manufactured very fine watches. Both of them were very highly regarded, and the phones in their workshops rang

frequently – new customers were constantly calling them. However, Hora prospered, while Tempus became poorer and poorer and finally lost his shop. What was the reason? It is worth reproducing Simon’s evocative reasoning extensively: “The watches the men made consisted of about 1,000 parts each. Tempus had so constructed his that if he had one partly assembled and had to put it down – to answer the phone, say – it immediately fell to pieces and had to be reassembled from the elements. The better the customers liked his watches, the more they phoned him and the more difficult it became for him to find enough uninterrupted time to finish the watch.

The watches that Hora made were no less complex than those of Tempus. But he had designed them so that he could put together subassemblies of about ten elements each. Ten of these subassemblies, again, could be put together into a larger sub-assembly; and a system of ten of the latter subassemblies constituted the whole watch. Hence, when Hora had to put down a partly assembled watch to answer the phone, he lost only a small part of his work, and he assembled his watches in only a fraction of the man-hours it took Tempus” (Simon, 1962: 470).

With some simple quantitative calculations and using small probabilities of failure at the sub-system level, Simon showed that a system made of stable sub-assemblies grew exponentially faster than systems made up of individual elements. Further, Simon argued that the stable sub-assemblies were required to have a property that he labeled “nearly decomposable units” – a unit of subassembly that if decomposed further would not allow the system to grow any faster, and if any larger, would not provide the maximum leverage for growth – that is, it would be less efficient. He showed persuasively that “the effect of the existence of stable intermediate forms exercises a powerful force on the evolution of complex forms” from simple systems (Simon, 1962: 472).

In our example, we can easily make some substitutions to grasp the significance of Simon’s idea for the evolution of entrepreneurial systems: think of watches as new venture firms, Hora and Tempus as two alternative regional entrepreneurial systems – one where all the skills necessary for creation and growth are concentrated in the founding entrepreneurs (Tempus) and the other (Hora) where a variety of professionals and others specialize in different skills necessary for creating substantial and enduring markets -- the phone interruptions as venture failures, and sub-assemblies or intermediate forms that have the property of nearly decomposable systems, as the numerous entrepreneurial sub-specializations ranging from business plan consultants, prototype producers, and lawyers drafting innovative partnership

agreements to voice coaches helping Indian call center employees to develop accents understandable by Americans and founders of bowling alleys and pizza/tattoo parlors who help attract and keep creative young people in the region concerned. The bottom line is that the existence of stable entrepreneurial sub-specializations will have a profound effect on the evolution of nascent entrepreneurial systems into more sophisticated wealth producing systems.

Entrepreneurial specialization: From Tempus to Hora and the multiplier effect

Entrepreneurial specialization is subtly different from functional or value chain specialization. It is specialization that occurs in the process of taking a nascent, cognitive idea from an “original mind” through various stages and gates to the creation and growth of a new market. Entrepreneurial specialization is organized around creating a market (for the first time) and is different from the normal production and maintenance activity once the firm becomes a going concern.¹ It is specialization that routinizes the creative act. A growing firm, especially one that is creating its own market category, generates novelty all along its life cycle. It creates new problems that require inventiveness all around it, not merely in formulating and implementing its core business model. For example, just as Wedgwood had to invent the punch-clock system, entrepreneurs and their stakeholders through the years have helped invent insurance contracts, hostage policies, gay health care benefits, varieties of risk capital and partnership contracts, not to mention an enormous variety of training programs ranging from the very concept of “management science” (funded through Ford at CMU) to ‘baristas’ in Starbucks and faux-Americans in a variety of call centers around the world. The reach of entrepreneurial innovation extends to cultural transformations too – be it the Kirloskar Brothers working with social reformers to change agricultural practices in India or Mohammed Yunus overcoming the Bangladeshi taboo preventing women from handling money.

Entrepreneurial specialization, therefore, goes beyond entrepreneurs and begins to encompass their political, legal, social and even cultural environments. In the wake of major entrepreneurship-fueled regional development, a variety of specialists begin to emerge and thrive – be they investors, lawyers, accounting firms, commercial artists and psychiatrists, or as Richard Florida points out in relation to Silicon Valley, tattoo parlors and nouveau cuisine restaurants (Florida, 2002). Specialization occurs not only along traditional functional lines such as marketing, finance and human resources, but also along specific *entrepreneurial* activities

¹ It is an interesting theoretical and empirical question as to what are the components of entrepreneurial specialization.

such as idea generation, proof of concept, proto-typing, concept testing, term sheet design, firm creation, market entry, brand design, business plan writing, capital raising of all varieties - seed capital, risk capital, growth capital, private placement; business development, growth management, franchise development, IPO logistics, business exit brokering and so on. A simple point to note here is that entrepreneurial law is not the same as business law, entrepreneurial specialization is not functional (management) specialization, and an entrepreneurial economy is not simply a subset of the more familiar corporate economy.

Having an idea is the easy part. Most people have ideas, but transforming an idea into a lasting venture or a thriving new market can be a brutally difficult process; the lack of a variety of specialists can throttle the founding process and stunt growth. In a Tempus model of regional economic development, the economy has to rely on the heroism of the rare individual entrepreneur to haggle, hustle and haul the intermediaries into existence. In a Hora model, however, the ground is strewn with a thousand seedlings each of which finds and winds its way into an interdependent ecology that can sustain and nourish a variety of new ventures and markets at least some of which will grow large and strong and provide needed shade for the more fragile seedlings. As early as 1944, the discerning Mr. Frederic Terman (ex president of Stanford University credited by many as the founder of Silicon Valley) observed, "I have learned a tremendous amount, for I had never before realized the amount of work required to make a device ready for manufacture after one had a good working model, such as number of drawings, the amount of detailed design that is involved to turn out a good job, the problems of how to get stuff to meet specifications, testing and standardization problems, etc." And he had not even mentioned key words such as incorporation, hiring, equity sharing, market development, client relations, nurturing a creative class and on and on and on...

Rapid evolution from a nascent entrepreneurial region to a more sophisticated one will likely see an evolution from functional lines to business development lines and to novelty generation in both. Further, founding entrepreneurs and their stakeholders will be able to enlist the services of the various specialists with the greatest ease during the evolution of the venture, as the market for such specialists would exist. Thus, we would see the flowering of markets for business plan writers, fund raisers, CEOs, technologists, growth specialists, IPO experts, contract experts, incorporation experts – each of whom will know self-contained bits of know-how (minimum decomposable units) on what it takes to create an enduring company and thriving new markets. While no single person may have all the knowledge, the system has sufficient numbers of specialists in each area to make both the specialists and the system

prosper in a symbiotic way. In short, the various elements of the entrepreneurial function will be chopped up and out-sourced. Redundant elements in one part of the function will provide vital support to other parts so the system will achieve a certain level of robustness to the coming and going of talented founding teams. And independent new intermediate specializations will be developed in an inter-dependent fashion – these will enable new combinations into product-market assemblies and regional economic development. It is when the elements of the entrepreneurial function gets out-sourced from an individual one-stop integrated entrepreneur that the region acquires what we have termed the *fabric* of entrepreneurship that is able to create the multiplier effect of Hora.

Weaving the fabric: Locus of specialization

So where might such specialization most likely occur? We offer a variety of conjectures on the locus of such entrepreneurial specialization. Specialization is more likely to occur in locations that (a) have idea producing and knowledge producing centers; (b) are urban and have technological, artistic, or professional hot spots; and (c) possess cultures that are tolerant of “deviant” ideas and behavior and are highly tolerant of “failure”; and (d) where the purpose of entrepreneurship education is to promote a culture of specialization rather than for producing entrepreneurs.

New knowledge is usually embodied in places such as universities, laboratories, centers of art and theater, and other idea producing focal points. New ideas are the crucibles of entrepreneurial opportunities. Such ideas can be in the sciences, the arts, theater and so forth. It is important to produce new knowledge – their source, origin or discipline does not matter.

Idea centers attract youth. Youth has a more favorable attitude towards and capacity for novelty and risk. Their tolerances for setbacks are also much higher. Further, they have no pre-conceived notions about what is right or wrong, what is a good idea or bad, what is risky or safe. They have less fear of losing because they have less to lose (lower opportunity cost) and even if they lose they have time on their side to make up the losses. Youth is not burdened by history, indeed deviating from history is considered a virtue. They have a desire to fashion their own futures rather than pursue their parents’ legacy.

Idea centers embody pluralistic knowledge – so important for synthetic experience – new ideas often originate at the intersection of disciplinary boundaries and are not to be found in silos. People in knowledge producing centers are used to working across boundaries and are

comfortable with the process. Indeed, youthful students embody multidisciplinary knowledge because they receive the latest developments from the instructing specialists.

Specialization is also more likely to occur in large urban centers that have technological, artistic, or professional hot spots. In such centers some of these skills are already part of the mainstream activities and there are enough people with skills in each of the specialist areas for critical mass to develop. Specialization is further aided by the existence of professional bodies and informal forums to help each other further develop and hone their skills and knowledge. Professionals owe their primary allegiance and fidelities to their professions rather than to their firms. The firm comes after the profession. With professional bodies or what academics call “communities of practice” come many formal and informal forums for sharing knowledge about entrepreneurship. Specialized knowledge flows much more easily and readily within a community of practice than it does within a structure organized around specialized silos. Two different silos do not speak the same language. In addition to formal exchanges in professional meetings, a lot of knowledge gets transferred via informal forums. As John Seeley Brown puts it, “It is at parties, restaurants, kid’s soccer or birthday parties that you discover whom you need to meet, who is working with whom, whom you should avoid,” the latest professional problems and issues or clever solutions in financing, opportunities, business development, etc. (Seeley-Brown, xxxx). The trench wisdom of the specialists is both “in the air” and flows frictionlessly. Most importantly, such forums bring to attention or create opportunities for their members. Role models point the way and the means to the new frontiers for the professional.

It is now easy to imagine the implication of a firm failure in a nascent entrepreneurial region, that is, in Tempus’ universe and contrast it to the one in a specialist based entrepreneurial region, that is, in Hora’s universe. In Tempus’ universe all is lost when an entrepreneurial firm ceases to exist because the entrepreneurs’ resources and their identities are tied up in the firm, while in the other the professional absorbs his or her affordable loss and merely plies the trade elsewhere. Failure of a firm is fatal in one, but a learning opportunity in the other. Indeed, in the next stage of evolution, we should expect to see these specialists deploy their skills from the traditional economy to the entrepreneurial economy with greater frequency and ease.

It is well known that it takes tens of new entrepreneurial ventures to produce a profitable new business, it takes hundreds of new ventures to produce a “home run”, and it takes thousands of new ventures to produce one that transforms a region or the world. Now consider the implications and significance of these numbers to the Tempus like entrepreneurial system

and the Hora like entrepreneurial system. In a Tempus like system the entrepreneur's identity is caught up in the venture. The venture is the entrepreneur. Setback at any stage of the evolution of the venture is therefore a crisis and at the extreme - fatal. Learning is trapped in a small set of individuals. If these individuals don't attempt to start a new firm again after a failure, their learning, experience and knowledge is lost to society. Language and vocabulary evolve around "failure." Low odds of turning profit and home runs make entrepreneurship seem risky. Entrepreneurs are seen as "different" and more risk seeking and maverick. Their choices and actions come to be seen as "biased" or "unnatural."

Contrast this with the Hora environment. Identity is attached to a specialization or profession and not necessarily to a venture. Setbacks imply only small and temporary losses, which are very affordable. Since setbacks during the various stages of the venture are not entirely associated with the individual or team, it is much easier for stakeholders to recover and apply their knowledge to future attempts. Since skills are embodied in specialization, stakeholders can ply their trade elsewhere. Language and vocabulary revolve around "options" as contrasted with "failure" in the Tempus system – venturing is seen as an option on that home run. Language and attitudes further evolve towards treating venturing as experiments, tests, learning opportunities, a shot at wealth making opportunities, a chance at solving a technological, or social problem, etc.

There are economic implications for the region because of this: it is easy to terminate unpromising businesses; there is an evolution of bankruptcy protection – that strikes a balance between protection and abuse of the system; acquisitions processes and acquisition markets develop (thus creating exit opportunities for entrepreneurs and investors – this enables the entrepreneurs, investors, and the regions avoid being trapped in ventures that are "walking wounded" and "living dead" – there are no such mechanisms or markets in the Tempus system).

There are also cultural implications: safety nets evolve for entrepreneurial tries: Jobs for "failed" entrepreneurs are easy to secure, second and third tries are allowed in such a system. Experience is valued and there is no stigma attached if one fails in his or her entrepreneurial attempts. We often claim that because in many societies there is a fear of failure and a low tolerance for failure, entrepreneurship does not take root or take-off. We now suspect that the causality is not entirely in this direction and may actually flow in the opposite direction. Because many societies are still in the Hora system, entrepreneurship is considered risky. It is the nascency of the system that induces such perception, attitude, and orientation towards entrepreneurship. Perhaps what we have here is a vicious cycle. Given a Tempus

system, entrepreneurship is a risky proposition. When entrepreneurship is perceived as a risky proposition societies stay trapped in a Tempus system.

Over time we expect societies to grow more knowledgeable, understanding, and empathetic towards the entrepreneurial process and evolve from treating setbacks as “failures” to one that considers them to be “options” “experiments” and “learning opportunities” and move away from a language of “failure”, “biases”, and “risk.” We also expect more specialization to occur in entrepreneurial financing. Different stages of a venture require different types of financing. From seed capital, to start-up capital, early stage capital, to growth capital, to harvest capital. In nascent entrepreneurial centers not all of these capital sources are well developed nor are they specialized to their stage. Such centers often focus on venture capital or early stage capital without developing the other sources, which are also vital to the evolution from a nascent to a developed entrepreneurial economy.

For example, for every dollar of venture capital in the US economy there is seven dollars of seed and early stage capital. This seed stage capital often comes from F-network – founders, family, friends and fools. “F-capital” is critical during the early stages – when ideas and ventures are mere conjectures or hypotheses. Funding at this stage depends on goodwill rather than the promise of a competitive economic return. Without “F – supported” ventures, there are no deals for downstream growth companies – the stock in trade for venture capital. Thus pouring money into public venture capital without corresponding development of seed and early risk capital would be a wasted effort. During this evolution from nascent to developed entrepreneurial economy we could expect to see a greater understanding of the relationships between venture development cycle and the dynamics of the various capital sources. We should expect see the evolution of funding sources that reflect the needs and stages of the business creation and development process. In short, even entrepreneurial capital will become specialized.

Specialization is more likely to occur in centers that are well connected to large markets of customers, suppliers, and exit markets for investors. Such connections are possible even if a town or region is not physically well connected to a large cluster. Take Bangalore as an example – during its rise as an entrepreneurial center Bangalore was connected socially, culturally, and virtually, but not physically, to Silicon Valley. Connection to large markets allows rapid, incessant experimentation, quick adaptation to new information and knowledge, easy exaptation, and quick scale-up if the idea is found to be a good one. Even if the idea is not a good one, or does not find traction, it is possible to quickly fold-up and reallocate resources

(which prevents escalation of commitment) to other more promising activities or alternatives. Finally, connection to large markets allows the entrepreneurial firm to attract talent and resources, especially financial, more easily.

Conclusion: Implication for Entrepreneurship Education

We will close with the implications of our hypotheses above for entrepreneurship education. Our current ideas on entrepreneurship education flows directly from the Tempus model – that the primary goal of entrepreneurship education is to create new entrepreneurs. We submit that this is too narrow an interpretation of the aims of entrepreneurship education. Entrepreneurs survive and thrive as much because of the context in which they operate as from their talents and efforts. The primary aim of entrepreneurship education ought to be to create an empathetic context for entrepreneurship. To create such an empathetic region, entrepreneurship must become part of the business literacy of the average citizens of the region. Such literacy creates a healthy context for entrepreneurship to flourish. Even if most people in a region do not become entrepreneurs themselves, broad understanding of entrepreneurship creates new investors (especially at the seed stage) for budding entrepreneurs, potential employees, suppliers and customers of entrepreneurial ventures. In the event that a venture fails, an empathetic employer might provide a job – thus creating the safety net so essential for entrepreneurship to flourish. Thus the aim of entrepreneurship education ought to be to create a support system for entrepreneurship. Such a support system will create the impetus and leverage necessary for the fabric to be weaved within a region. In such a system, anyone who has an idea is then capable of taking advantage of the fabric of specialization to bring the idea to market rather than wait for a heroic entrepreneur to take the latent ideas to market. For this to happen our ideas about education must evolve from training entrepreneurs to creating and developing the context; from developing skills to building local entrepreneurial culture; from introducing entrepreneurship education at graduate level to introducing it at school level; from thinking about entrepreneurship as business start-up to considering it a method for human problem solving; from considering entrepreneurship as a profession to thinking of it as a fabric of society. Our ideas about entrepreneurship must evolve from operating within a Tempus system to creating a Hora system.

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