Viewpoint

Accelerating venture creation and building on mutual strengths in experimental business labs

Martin G. Curley and Piero Formica

Abstract: *This paper articulates the opportunity of using an experimental business laboratory approach as a means of accelerating the creation, incubation and testing of new venture ideas. Such a strategy leads to the establishment of a micro-ecosystem of aspiring entrepreneurs and others in a business laboratory environment. The goal is to create a mini idea-supercollider, in which a microscopic 'De Medici Effect' (Johansson, 2004) can be achieved, with aspiring entrepreneurs with different ideas, experiences and disciplines meeting in a spirit of open innovation – the sum of the whole being much greater than the sum of the individual parts. The development of an ecosystem for idea generation and rapid testing using business simulation tools can accelerate the creation, mobilization and diffusion stages of the knowledge lifecycle (Birkinshaw and Sheehan, 2002) in a knowledge- driven entrepreneurship venture, while de-risking potential ventures before significant capital is applied.*

Keywords: *experimental business labs; knowledge transfer; knowledge-driven entrepreneurship; business simulation; venture creation*

Martin Curley is Professor of Technology and Business Innovation at the National University of Ireland, Maynooth, Ireland, and Senior Principal Engineer and Global Director of IT Innovation at the Intel Corporation. He is based at Intel Ireland Ltd, Collinstown Industrial Park, Leixlip, County Kildare Ireland. E-mail: martin.g.curley@intel.com. Piero Formica is Founder of the International Entrepreneurship Academy (www.intentac.org) and Visiting Professor of Entrepreneurship at the National University of Ireland, Maynooth, County Kildare, Ireland. E-mail: piero.formica@intentac.com. Martin Curley and Piero Formica are co-authors of the recently published book 'Knowledge-Driven Entrepreneurship' (see the 'Monitor' section in this issue).

> 'The common measure of all value is man.' (Abbé Ferdinando Galiani, *Della Moneta*, 1751.)

The time is ripe for a new and far-reaching approach to the idea production process and, particularly, the idea testing process of high-expectation entrepreneurial ventures.[1] The consolidated approach of science and technology incubators, which has its roots and rationale in the industrial era, is supposedly based on the subsidized protection of aspiring entrepreneurs. However, high-expectation entrepreneurs typically move much more quickly than supporting agencies, and therefore for them the reality is different from the theory. Increasingly, in the knowledge era, companies have adopted or are now ready to embrace creativity-driven and productivity-driven open models of innovation. In this new climate, business initiators can help to raise the productivity of their founding teams by earlier exposure to the benefits and indeed the risks of open innovation. This is why we propose an experimental laboratory approach, in which young minds with an aptitude for new venture creation can be opened up and energized through intelligent exposure to risk (Apgar, 2006).

The boundaries of future entrepreneurship may be redefined by a cluster of innovations that will shock the current entrepreneurial fabric. Clean-technology entrepreneurial ventures will create an environment in which clean-energy technologies (such as electrified vehicles, carbon capture and storage, and concentrated solar power) can be adopted and spread. The transformation through technological innovations of the auto and utilities sectors will encourage new entrepreneurs to kick-start electrified vehicle businesses (including battery producers, communications and infrastructure providers and electric car manufacturers) to leapfrog over the current mainstream competitors (Woetzel, 2009; Hensley *et al*, 2009) through disruptive innovative action (Christensen, 1997). Entrepreneurship-redefining markets will also stem from developments such as green affordable housing; health 2.0 (that is, improving healthcare delivery through ICT support, offering the prospect of sharing experiences and best practice to enhance the focus of development efforts[2]); genetic engineering; nanotechnologies; and the fusion of nano, IT and genetic sciences.

Made possible by the evolution of new Web technologies (and indeed of low-cost airlines such as Ryanair and AirBerlin), which make human interactions more valuable and less costly, collaborative networks have been developed to enhance the intensity and impact of entrepreneurial activity that is promoted and demanded by innovation-based economics. In an experimental business laboratory, where innovative business ideas with high-growth expectations can be tested, a network of interconnections binds aspiring entrepreneurs, experts and non-experts together in unlikely ways, with the non-experts challenging the biases of the expert. Such an environment provides a key opportunity for the radical transformation of the business-as-usual habit, as each participant learns from the experiences of the other participants. The result is a 'hyper-entrepreneurial', turbocharged, innovation-friendly business culture.

In their book *Knowledge-Driven Entrepreneurship: the Key to Social and Economic Transformation,* Andersson *et al* (2009) portray the experimental business lab as a network of outsiders (various entrepreneurial individuals 'federated' from universities, research labs, start-ups and business partners), each facing the formidable task of becoming part of an innovation ecosystem rather than relying on himself or herself. The resulting interactions begin to produce social and economic factors which promote an entrepreneurial cohesion that in turn will lead to the formation of the innovation ecosystem.

In well-established experimental labs, what matters goes beyond an evidence-based approach, founded on data from inside and outside the laboratory, to a 'possibility' approach. In Einstein's words, 'the intuitive

The possibility approach in the context of experimental laboratories

Qualitative in nature, the possibility approach is 'a means of assessing to what extent the occurrence of an event is possible and to what extent we are certain of its occurrence, without, however, knowing the evaluation of the probability of this occurrence. This can happen, for instance, when there is no similar event to be referred to.' (School of Rural and Surveying Engineering, National Technological University of Athens, www.survey.ntua.gr/main/labs/rsens.)

An experimental business laboratory should include the four elements that constitute the concept of possibility: 'permission' (aspiring entrepreneurs are allowed to process their business ideas); 'feasibility' (it is possible to process business ideas); and 'plausibility' and 'consistency' (judging the possibility of occurrences, bearing in mind their compatibility with available knowledge and experience).

The business idea is thus treated as an assumption or a conjecture, based on incomplete information and imprecise or vague knowledge.

The possibility approach, which deals with uncertainties, guides the investigation of the business idea within the experimental laboratory.

mind is a gift from God and the logical mind is a faithful servant': entrepreneurs need to demonstrate both approaches. Key elements of the experimental laboratory strategy are, first, to test the bounds of *possibility* ('ideation') and, second, to gather information on the bounds of *probability* (diffusion and business model testing). New ideas with the potential to create value can fail to do so because of problems of adoption (Baldwin and Curley, 2007): an experimental laboratory offers the key value-added opportunity of testing potential adoption or diffusion paths before significant capital has been spent.

Next, to help aspiring entrepreneurs test their hypotheses, the business lab must recognize the presence of unseen processes. The behaviour and actions of individuals in the lab system have key implications for the aspiring entrepreneurs. The aspiring entrepreneurs can perform experiments along a spectrum from the known knowable to the unknown unknowns. They can include complex, chaotic issues and cover a vast range of other factors, such as morale, self-motivation, a 'naive optimism' bias, tolerance to risk, trust, concern for fairness, and herding behaviour and other human tendencies in contemporary economic life. By inquiring into unseen processes, experimental labs attempt to shape a community of entrepreneurs whose members complement each other's strengths. No participant perceives a threat from the strength of the others and each perceives a stake in the others' success. This is the classic 'win–win' situation, reflecting an 'abundance mentality' (Covey, 1989) which accepts that knowledge multiplies when it is shared (Amidon *et al*, 2005; Andersson *et al*, 2009).

Social networking has great appeal for aspiring entrepreneurs, who see in social gathering places (both physical and virtual) the preconditions for co-creating content, products and services. In this respect, the work of experimental labs is to turn socially-driven relationships into value-led network interactions that increase the possibility of radically enlarging the scope and reducing the cost of trying out a business idea with high-growth expectations. Whereas social networks are concerned with connecting people, value networks dig deeply into the *who* (who the participants are), *where* (where they come from/where they are going), *why* (why they are in the network), and *how* (how they interact). We may summarize the nature and significance of value-led networks in the context of experimental business labs as follows:

- Since 'value is a relationship between people' (Ferdinando Galiani, Italian economist, 1728–87), connectivity is the focus. People with different backgrounds and expertise are connected so that they can test their business ideas by working together. An individual's choices are thus intertwined with the choices of others ('social influence').
- Network relationships are visible to all parties and are guided by performance. The lab's 'temperature' is taken by applying mathematical rigour to the assessment of how personal interactions are affecting the lab's entrepreneurial community. Network mathematics quantifies how connected the members of a lab are.
- The idea evaluation process assigns a degree of compatibility to a given idea in terms of its relevance to and connection with the network.
- The network learns through exposure to various situations. Signals are transmitted from one business idea to another.
- Patterns of business ideas are discovered. This makes it possible to move across adjacent market boundaries. Permutations and combinations of business ideas are possible.

An experimental lab is, therefore, both a physical and a logical environment which enables and facilitates two key stages of the innovation and entrepreneurial process: the creation of an idea and the early testing of possible diffusion patterns to determine its potential viability and its probability of success.

From a creativity point of view, the experimental lab creates a kind of supercollider environment in which a 'De Medici' effect can occur (Johansson, 2004), with breakthrough ideas and insights emerging at the intersection of different disciplines, cultures and entrepreneurial individuals. As we move forward, it is likely that the information intensity of new products and services will continue to increase and that the Internet of the future will emerge as the dominant delivery channel for them, especially for the services. Arguably, the future shape of the Internet, with improved quality of services, guaranteed service-level agreements, and improved mobile access through technologies such as WiMax, will enable a Cambrian-like explosion of new knowledge or, indeed, the kind of new Renaissance envisaged in a recent report on the European Research Area (EU, 2009).

Applying Osterwalder's (2004) taxonomy of business models, an environment supported by a computing platform could be created which would enable the rapid simulation of product and service innovations, and the associated business models, to enable early learning about market potential and profitability prospects without significant cost. The integration of the Bass Diffusion equation (Bass, 1969)

and other diffusion theories into a simulation environment (Rogers, 2003; Moore, 1991) would enhance the simulation and contingency testing.

Such an environment would lower the entry barriers to entrepreneurship by making a rich environment for experimentation available to the aspiring entrepreneur. The development of such a virtual environment will require a high degree of focus, but is in itself a market opportunity for an aspiring high-expectation entrepreneur. Market prediction techniques that enable more accurate forecasting of demand for new products using gaming theory are already showing significant promise (Erhun *et al*, 2007). The use of multi-player, multi-media virtual environments to conduct experiments and learning in the context of homeland security is also indicative of the promise of such approaches.

The lessons learned from the Great Recession call for a new global socio-economic model. Experimental labs will help entrepreneurs to learn not only about value, but also about values. C.K. Prahalad (Wartzman, 2009) argues for a world in which business is an instrument of social justice. According to Drucker (1973), the purpose of business should not just be to make profit: businesses should understand that profit is the outcome of doing the right things in the right way. Perhaps aspiring entrepreneurs in experimental labs can incubate and demonstrate the kind of leadership the world will surely need.

Notes

[1] 'High-expectation' start-ups are firms launched by entrepreneurs with high ambitions for growth. See Curley and Formica (2008).

[2] The International Organization for Knowledge Economy and Enterprise Development (IKED), a think-tank based in Malmö, has designed and implemented the Patient Certificate Scheme (PCS) 'to enable people to become more aware, and to be empowered, so as to take the measures needed to counter pressing health issues and thus promote long-term wellness, whether proactively or when a disease has already struck.' The PCS has established a network of partners around the world, including think-tanks, universities and private as well as public agents engaged in health services and communication.

References

Amidon, D., Formica, P., and Mercier-Laurent, E. (2005), *Knowledge Economics: Emerging Principles, Practices and Policies*, Tartu University Press, Tartu.

Andersson, T., Curley, M.G., and Formica, P. (2009), *Knowledge-Driven Entrepreneurship: the Key to Social and Economic Transformation,* Springer, New York and Berlin.

Apgar, D. (2006), *Risk Intelligence: Learning to Manage What We Don't Know*, Harvard Business School Press, Boston, MA.

Baldwin, E., and Curley, M. (2007), *Managing IT Innovation for Business Value*, Intel Press, Santa Clara, CA.

Bass, F. (1969), 'A new product growth model for consumer durables', *Management Science*, Vol 15, No 5, pp 215–227.

Birkinshaw, J., and Sheehan, T. (2002), 'Managing the knowledge lifecycle', *MIT Sloan Management Review*, 15 October.

Christensen, C. (1997), *The Innovator's Dilemma*, Harvard Business School Press, Boston, MA.

Covey, S. (1989), *The Seven Habits of Highly Effective People*, Simon and Schuster, New York.

Curley, M.G., and Formica, P. (2008), 'Laboratory experiments as a tool in the empirical economic analysis of high-expectation entrepreneurship', *Industry and Higher Education*, Vol 22, No 6, December, pp 355–363.

Drucker, P. (1973), *Management: Tasks, Responsibilities, Practices*, Harper & Row, New York.

Erhun, F., Gonçalves P., and Hopman, J. (2007), 'The art of managing new product transitions', *MIT Sloan Management Review*, 1 April.

EU (2009), *Preparing Europe for a new Renaissance: a Strategic Review of the European Research Area*, European Commission, Brussels.

Hensley, R., Knupfer, S., and Pinner, D. (2009), 'Electrifying cars: how three industries will evolve', *McKinsey Quarterly*, No 3.

Johansson, F. (2004), *The Medici Effect: Breakthrough Insights at the Intersection of Ideas, Concepts, and Cultures*, Harvard Business School Press, Boston, MA.

Moore, G. (1991), *Crossing the Chasm: Marketing and Selling Products to Mainstream Customers*, Harper Business, New York.

Osterwalder, A. (2004), *The Business Model Ontology – a Proposition in a Design Science Approach*, PhD thesis, HEC Lausanne.

Rogers, E.M. (2003), *Diffusion of Innovations*, 5th edition, The Free Press, New York.

Wartzman, R. (2009), 'Authentic engagement, truly', *Business Week*, 4 December, www.businessweek.com.

Woetzel, J. (2009), 'China and the US: the potential of a clean-tech partnership', *McKinsey Quarterly*, August.