CAPTURING THE DYNAMICS OF CO-PRODUCTION AND COLLABORATION IN THE DIGITAL ECONOMY

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Abstract

In the digital economy, the creative industries revolve around dynamic, innovative and often unorthodox collaborations, whereby numerous large, small and micro-businesses come together for the duration of a project, then disband and form new partnerships for the next project. Research designs must therefore address multiple contexts and levels presenting an analytical challenge to researchers. In this project we extend work that investigates the significance of emergence in theorising entrepreneurship into an exploration of how to articulate the creation and flow of value and effective ontology in a creative landscape.

The Project

Studying the creative industries in the Digital Economy presents challenges from a research point of view, because of the multifaceted nature of the domain, which embraces:

- A diverse range of increasingly cross-linked industries (e.g. arts, culture, heritage, gaming, performance, sports)
- The potential for many inter-related (aesthetic) artefacts and services
- The potential that digital technology can establish new resonances between social practices and the techno-creative milieu
- The need for continually (re) organising entrepreneurial and innovative team collaborations around new projects
- The emergence of novel, sometimes unorthodox, combinations of people and technologies for which there may be no precedent
- The potential for values issues to cause clashes regarding interchange of artistic, cultural, social capitals (particularly where creative output is critical or challenging of powerful groupings).

These activities take place in a business environment that is fast-moving, has high market uncertainty and has indeterminate outcomes, as new technologies continue to evolve and standards and legislative practices surrounding their use are unclear. Better understanding of how new value creating systems emerge in such landscapes can give us a better insight into how such processes can be managed and supported, thereby contributing, in a small way, to the sustainability of the creative industries overall. Yet the very diversity and fluidity of such ecosystems presents a considerable challenge to traditional models of research into business innovation and entrepreneurship. Inevitably our research designs must address multiple contexts, locations (virtual and physical) and levels of analysis presenting a methodological challenge to management researchers as Pettigrew has argued [1].

An obvious approach to dealing with this fluidity is to simplify research designs by focusing on one level of analysis, in most cases the individual, the firm or the industry. Yet this can only lead to partial, impoverished pictures of what is surely a far more rich and vibrant milieu. Thus, we used this study to develop workable methods for capturing the dynamics of such systems, based on some earlier work we had carried out applying complexity theory to the study of entrepreneurial firms. The assumption is that traditional methods such as cross-sectional analysis and retrospective narratives do not capture either the richness, or processes of emergence in such a way that enables knowledge transfer to new projects in the same milieu.

Our approach was to work with actors in live projects in order to examine how novelty emerges over time in dynamic, fluid domains where uncertainty is high and outcomes are indeterminate. Firstly, we carried out an internet-based case study of Blast Theory/Rider Spoke, to generate understanding of concepts such as pervasive computing, ubiquitous computing, urban sensing, and the eco-systems surrounding them. Secondly, we carried out interviews and discussions with staff at IT-Innovation, a company involved in developing a new business model for a portal in the post-production rendering industries in Soho. Thirdly, we carried out participant observations of interactions in Proboscis' Sensory Threads project and the Gesture and Embodied Interaction workshops at Newcastle and Cambridge. We explored how novelty emerged through interactions between the actors in the projects, and how novelty was related to value creation and the possible engagement of [new] external stakeholders.

Agility and Sustainability

As entrepreneurship researchers, we have asked questions concerning how entrepreneurs maintain agility, the ability to see ahead, to strategise in an innovative manner, to act at the right time to repeatedly achieve and maintain competitive edge in such uncertain and unpredictable environments. Our previous research, based on complexity theory [2][3] has shown that entrepreneurs who are successful over long periods of time are continually organising and reorganising in anticipation of new products, new services, new business models, and new value creating systems not only reflecting, but shaping new patterns of consumer behaviour, that may be some way ahead in the future. To achieve sustainability over time, they are practising anticipatory behaviours that can be learned or developed in others. A key part of that behaviour, is that they are engaged in a pattern of continuous experimentation that repeatedly generates new strategic options, some of which, in time, become 'the firm', when the time to act is right. We have identified four key, highly interrelated processes, which result in the emergence of novelty over time in entrepreneurial firms:

1. Experiments: small scale models testing for fitness in the landscape
2. Reflexivity: the continuous reshaping of the meaning of what the owner and the business 'are' in relation to others
3. Organising domains: the breaking and reforming of everyday patterns of doing doing business
4. Sensitivity to conditions: the detection and evaluation of environmental change and the motivation to respond.

These processes are not planned or formalised. Rather, they are a 'way of being', the essence of agility and foresight for the entrepreneurs we have worked with. We argue that it is the multi-dimensional concentration on these patterns of behaviour that is at the heart of entrepreneurial competence through effective strategising over time to produce a *sustainable* endeavour. Over time, the four EROS processes interact to produce new emergent structures; yet not all structures persist to the point where they are fully implemented or developed. Instead temporary structures that <u>might</u>, persist reflecting Sawyer's 'Emergence Paradigm' of social structures that [4] that posits a hierarchical model of individual, interaction, ephemeral emergents, stable emergents, and social structures.

We have identified such temporary structures in our early empirical work in this domain. They seem to include particular business models, particular identi-

ties, particular dominant logics, particular triggers for change etc. Within that milieu, some are more stable than others and became part of the business; others initially commanded intensive resource and attention, but were not developed through to fruition. Nonetheless, even ephemeral and unstable structures that did not persist, exhibited ontological status and considerable causal power – at least for a time, as the firm explored whether value could be extracted from these resonant structures in the face of highly uncertain environments. The continual construction of such temporary structures thus represents a form of 'anticipatory strategising' on the part of creative individuals, who, in their identification and exploitation of new and expanding niches, seek not to merely react to, but also to shape new forms of consumer and/or participant behaviour as industries change.

From this conceptual base we have derived a framework [5] (too big to reproduce here), which, we posit, captures how novelty arises as emergent order over time; through the development of ephemeral, and then stable emergents. This framework makes a significant contribution to methodological approaches to understanding the dynamics of innovation by opening up possibilities derived from rigorous theoretical conceptualisations of emergence.

An empirical testbed?

We used this project as an empirical testbed for our framework. We asked the following questions:

- Does the framework coherently and comprehensively theorise the linkage between entrepreneurial processes and emergent ontologies produced in the creative industries/digital economy context?
- Does it support effectively the collection of data and the ordering and categorising of empirical observations concerning how different phenomena, such as new products, services, firms, networks, patterns of behaviour, careers, identities, emerge over time across multiple levels of analysis?
- How are these observations best linked to improving practitioner competence and sustainability of the firms overall?

Our assumption was that the projects in this study were analogous in certain key ways to the entrepreneurial firms we had studied in the past, in that the emergence of novelty was not limited to local change or value, but had the potential to grow, to produce or capitalise on new markets, or maybe even to shape new patterns of consumer behaviour. Of course, we are all familiar with acts of individual creativity that result in artistic, social or cultural capital that may not in themselves realise economic value, or be widely available, reproducible or disseminated as products or services outside the initial act of creation: a unique artwork or a performance for example.

Yet new digital technologies have thrown up innovative new possibilities that can challenge, disrupt and may even overthrow existing revenue streams and industry patterns. It is this indeterminacy of outcome, the dynamic and unpredictable, the unknown shape or character of scalability in new industries, and how it will be achieved, that resonates with the tenets and underpinning assumptions of complexity theory. And it is here that we believe our framework has the methodological potential to capture and make sense of multiple observations across different levels of analysis and show linkages between levels as new phenomena (products, services, business models) emerge over time. We argue that in identifying and linking the unstable and ephemeral emergents that inevitably arise during creative collaborations – the twists and turns, unformed explorations, failed experiments, discarded and retained ideas – to entrepreneurial, processes that preserve artistic and creative value, we can gain much improved insight into how creative individuals operate and achieve sustainability in conditions of high uncertainty.

Outcomes

Clearly, being involved with projects as rich as those presented by Sensory Threads, Gesture and Embodied Interaction, and IT-Innovation has afforded us a rich stream of data and connections that will take many months to analyse. In this limited space, it is only possible to identify some preliminary outcomes that are nonetheless highly promising. Using our conceptualisation and our framework, we were able to identify and track the emergence of 'stable emergents':

- Sensory Threads: the 'Rumbler' a novel interactive soundscape device
- Gesture: a unique combination of skill-sets in the sound/motion capture domain, supported by robust code
- IT-Innovation: a potential business model as yet untested

These 'stable emergents' arose during the period of the projects from very early stage ideas that were not well articulated at the outset of Creator. As discussions in the rich interdisciplinary milieu progressed, possible trajectories were identified and tested out, either as thought experiments, shared metal models, or sometimes as rough working prototypes. At some point, these 'ephemeral emergents' were narrowed down to the most promising variant: at this point the transition from ephemeral to stable occurs. We would moot that this is the point at which discussions shift from value creation to value capture. This is a significant outcome that with in-depth discussion can be developed into a significant contribution to the entrepreneurship and innovation literatures.

Final thoughts

The project has in the short term enabled us to test a framework that enables and supports experimental design, data collection, data analysis and reflective evaluation of the emergence of novelty, with very promising results.

More significantly, it has enabled the development of a methodological agenda for capturing social value and social resonances for future projects in the creative industries/digital economy milieu. By developing insight in this area, we hope to better articulate how leading edge creative firms and groupings contribute to the creative industries ecosystem overall – and correspondingly, we hope, improve their sustainability.

References and Notes

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