



Emergent Collectives Redux: The Sharing Economy

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I've previously written about emergent collectives (ECs) in the "Peering" column,¹ and I mentioned the sharing economy (SE), otherwise known as the "gig economy."² Recently, I heard a good talk about the SE by Jan Marco Leimeister in his inaugural lecture at the University of St. Gallen. I was so struck by his evidence of this economic shift, which was part of my prediction in a previous article,² that I read one of the supporting documents.³ Upon reading this analysis (really a survey and analysis of other studies) of the SE, I was struck by the relevance of the EC concept.

If you haven't read,¹ the features of an EC are

- a network of information/function nodes that has minimal central control, and that's largely controlled by a protocol specification,
- in which it's easy for people to add nodes to the network,
- and where they have a social incentive to do so.

Examples of ECs are the WWW itself, Napster, Wikipedia, Facebook, Seti@home, and Linux. ECs are disruptive and difficult to predict because of the distributed nature of control. Previously I postulated, "Maybe we could say there are two types: social and economic emergent collectives."¹ I vaguely tied this to the idea of increasing self-employment: "We're all becoming self-employed."² But reading³ makes me see that I missed a boat by not writing more about economic ECs.

Economic Emergent Collectives

In 2005, originally I focused on people sharing their resources with others for mutual benefit and to be part of something greater than themselves (www-cdr.stanford.edu/~petrie/revue). But apart from the examples of apps and Amazon's Mechanical Turk, I totally failed to predict the rise of ECs, in which participants earned

money facilitated by an intermediary platform. In fact, these examples are like ECs: we need only amend our third point of the definition to "and where they have a social or economic incentive to do so."

Exemplars of SEs are Uber and Airbnb. But also, as I've pointed out,² these are essentially ways of being self-employed, and include Bandwagon, Ridewith, Gett, Tripda, and Via in just the transportation arena. I mentioned webcams and hotshooting, too (discussed further in the next section). If we look at what's meant by "sharing" in all of these, it's that an individual has a personal resource – either a service or tangible capital – that can be leveraged with a typically Internet-enabled intermediary platform. We might better call this "micro-capitalism" rather than "sharing."

Immediately, you can see that not only crowdsourcing but also micro-loan systems are examples of ECs/SEs – because there's a network that scales, as it's largely automated by use of a protocol that allows people to easily add their nodes and gives them an incentive to do so. In fact, an excellent article on crowdsourcing⁴ distinguishes the kind of crowdsourcing in which people participate economically as "crowd work," but all are some kind of EC.

Two Perspectives of the Same Phenomenon

So what I thought were different phenomena – ECs and increasing self-employment through SEs – are the same thing, seen from different perspectives. Yes, we're increasingly self-employed, and the primary mechanism is SEs, because they're ECs, which means they can scale.

Returning to the academic study of SEs,³ it's easy to see that they miss the network aspect of SEs that the concept of ECs adds. Without this concept, the reason for the spread of these

disruptive technologies won't be understood.

I also found that the studies covered by this meta-study were narrow in focus. For example,³ there were reports that one of the papers put the resources shared into four categories:

- spare time for performing errands or skilled tasks (such as TaskRabbit or Fiverr),
- spare time and cars to drive around customers (Uber or Lyft),
- extra rooms (Airbnb or Flipkey), and
- occasionally used tools and household items (Streetbank or Snap-Goods).

This is a narrow view of sharing and even presumes no overlap among resources shared. Hotshoting, for instance, is the “sharing” of trucks and trailers to haul “short loads” too small for a complete semi-trailer load. Webcamming is a way of selling sexuality virtually. All of these applications use some intermediary platform that facilitates someone adding a node to the network: a virtualized service, product, or, in general, a resource.

This EC aspect is in fact taken into account, to some extent, by the discussion of “multisided markets” that notes the ramifications of “P2P offerings are enabled by intermediary platforms that provide sufficient matchmaking services between resource providers and demanders (sic), often in exchange for a service or brokerage fee.”³ The discussion here is good, but misses — as do the other good discussion points of crowd-sourcing, trust and recommendation, and consumption-based pricing — the points of a network that's easily added to and the scalable nature of the network control, which lets the network grow and thus be disruptive.

Complex Tasks

In general, I found Robin Knote and Ivo Blohm's paper to be worthwhile

reading, as it's a first broad take on what's an increasingly important phenomenon that will indeed allow more people to be self-employed, in possibly many areas at once. And one sentence really caught my attention: “Underlying calculation methods are especially interesting to investigate in case service offerings become more complex, as it is the case in (crowd) data driven calculation of multi-hop ride-sharing offers.”³

This hints at the complex tasks I predicted but that haven't occurred yet, which I've questioned.² Virtual hitchhiking has been a standard way to travel in Germany for decades (<https://de.wikipedia.org/wiki/Mitfahrzentrale>), but it's limited to point-to-point. Can such long-distance ride sharing catch on in other places, especially the US? There are of course such networks already, but it's not yet clear that they're spreading, perhaps because of cultural factors. For example, www.rdvouz.com does seem easy to use, and seems to fit the definition of an EC, but I haven't heard of this particular technology disrupting long-distance bus services.

So let me ask you, the reader, whether you think multihop ride-sharing offers will be an evolution of current systems. Comment on this column at www.facebook.com/InternetComputingPeering — please.

What's Next?

What can we expect next? One answer might be micro-manufacturing, because this also ties in with DIY (do it yourself).⁵ Because, just as you can create bitcoins at home with sufficient investment in compute power, you can, with sufficient capital, create a micro-factory for custom products with increasingly sophisticated 3D printers.

In fact, a rather interesting and controversial example of this is selling the plans, rather than the actual product, for guns,⁶ including semi-automatic rifles⁷ on the Web. One of the early-plan authors is already in a

legal battle with the US government over what can and can't be made legally with 3D printers.

That's a fun example, but it's not an EC. So what else is next? What clever network of 3D printers will enable more people to be self-employed, and maybe disrupt some part of commercial manufacturing?

One scenario for this is far-fetched right now. Suppose we create a network platform that allows various people to join together to make parts for say, custom bicycles. Shipping would be part of the outsourcing of all these tasks using some intermediary platform. And the more providers and customers that participate, the more powerful this virtual factory would become.

How far-fetched do you find this example? What are the barriers to such a system? What's a better example of what's next? Again, please do some of my work for me. Comment! Thank you in advance for sharing your insights. □

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