

536. Competition and collaboration

In economics, the focus has lain on competition, as a goad to efficiency and innovation. However, there are several economic and other reasons for collaboration. When demand for a product gets saturated, due to the law of decreasing returns, the producer can enter a new market elsewhere, as discussed before, in the cycle of discovery, or he can engage upon a new activity besides the current one. The law of diminishing returns says that the more one has of something, the less an additional unit, called a marginal unit, is worth to you. The theory of price entails that price is set by equalising the ratio between price and marginal utility to the user between different products. As a producer, you can compete by lowering price or raising marginal utility, with innovation, or promotion.

In entering a new activity, you can build up the needed resources and skills yourself, or you can faster and more cheaply buy into those of someone already engaged upon it, in collaboration. In cooperation, the goal is to go beyond the *zero-sum game* of competition, where you gain by the other's loss, to a positive sum game where you both gain

In the first approach, this is based on what exists. The deeper value of collaboration, however, lies in resonance, in mutual influence that yields an opening up to 'novel combinations' of ideas, resources and skills of the partners. That entails uncertainty concerning the potential of partners and their conduct. Not to forego that potential, one needs trust and restraint of control. That is not only a moral but also an economic imperative.

The value of collaboration was seen but only according to economic doctrine, where it had to be based on a balance of give and take, a 'quid pro quo'. Williamson (1993) proposed, and I agree, that if trust means give and take without going beyond calculative rationality, it does not add anything to economic doctrine, because that already includes *enlightened self-interest*, in surrendering advantage in the present in order to gain greater advantage in the future. But due to the uncertainty of conduct and contingencies in the future, trust requires a leap of faith across that uncertainty, and cannot be fully calculative, even if to some extent one can make rational inferences of trustworthiness from the arrangement of the relationship and observed conduct, as discussed before. If it does go beyond calculative self-interest, Williamson argued, it cannot survive in the competition of markets. Against that I have argued, also in personal debate with Williamson, that since in modern times innovation is crucial for survival of firms, and innovation engenders uncertainty, trust beyond calculative rationality is needed in markets. The give and take, voice and trust in a collaborative relationship tie in with the concept of resonance.

What kind of cooperation could or should there be? Innovation is enhanced by collaboration between different, complementary skills, knowledge or other resources at some cognitive distance, discussed before. Such distance hampers mutual understanding and hence the efficiency of collaboration, but also offers the opportunity of novel combinations. Optimal distance is large enough to offer the opportunity of novelty, but not so large as to prevent understanding. The combination of some distance for variety and enough understanding is a source of innovation. Where that optimum lies depends on accumulated knowledge, and experience with partners who think differently. The larger those are, the more one has the 'absorptive capacity' to understand, and the larger distance can be., but the larger distance must also yield something new. As discussed, this was confirmed with an econometric model (Nooteboom et al.2007)

Organisations can cooperate by merging or by one side taking over the other. The alternative to such mergers and acquisitions (MA) is an alliance between partners staying apart as separate entities. In MA, cognitive distance can decline too much, because in the new, merged organisation there is a need to limit cognitive distance by means of an

‘organisational focus’, to align workers in a joint purpose and ways of conflict resolution. Also, an MA is less flexible because more difficult to end and disentangle than an alliance. That does depend on institutional conditions. In the US one can separate from a partner, in firing a worker or selling part of a firm, more easily than in Europe. An MA can better control conflicts of interest, in an overarching hierarchy that is lacking in an alliance. In the absence of such hierarchy, an alliance needs to be better at the practice of trust beyond control, discussed before. It needs to master the art of ‘voice’ to deal with conflicts. However, a MA may be needed to realise certain forms of economy of scale.

There are different types of economy of scale. One is to profit from specialisation that is technically inseparable and necessitates integration in an organisation. In removal, one needs two pairs of hands to move furniture. Another effect of scale is the *pots and pans* effect, characteristic of process industries such as chemicals, refuse processing, energy production, steel manufacturing and a nuclear reactor. The effect is a consequence of the mathematical law that the surface of a spherical container, such as the reaction chamber of a process industry, is proportional to the square of the radius, and its content is proportional to its third power. The surface determines the material cost, and hence weight and transportation cost, of the container, its cost of cleaning and its radiation of heat or refrigeration to the outside. The content determines the volume of production, and hence revenue. Productivity, measured as the ratio between revenue and cost then is proportional to the radius and hence the diameter and size of the container.

The formula also applies to containers such as houses, trucks and Jumbo jets. There also, the surface determines costs of material, air resistance and fuel, while the content determines the space for users, such as the possible number of seats.

Why are warm-blooded animals at the north pole large and bulbous? Because the loss of warmth by radiation through the hide relative to inner warmth of the body is less than for small size. That is also why small animals and people huddle together in the cold. But why, then, are there also large, bulbous animals in hot climates, such as elephants, rhino’s and hippopotami? The same principle applies, but in reverse. There it is about absorption of heat into the body through the hide. Then, why are there also thin, elongated, lean animals there, like puma’s and leopards? Because in the spurt of pursuing a prey, they generate even more heat relative to their environment, and they have to radiate that outwards. When not in pursuit, they lie panting in the shade of a tree.

Another economy of scale arises with an indivisible production factor such as an attendant in a shop, a bank counter, emergency or service desk, and so on. Its productivity depends on the number and frequency of calls, which relates to size. Lack of custom causes the unproductivity of idle capacity. This is one factor causing the decline of small shops relative to large ones. This could be dodged when shops were at home, so that idle capacity could be used for housekeeping or child care, or for a shoe shop to repair shoes in the absence of customers. The problem of idle capacity at small size of utilisation arises also for specialist professional service, in a small organisation, such as a legal expert. Together with other small organisations, the organisation then has to collectively outsource that service, to create sufficient utilisation of capacity. This economy of scale combines with that of the size of an airplane in the need for a pilot, whether a plane is large or small. This economy of scale is a prod towards automation and self-service, in shops, hotels, gas stations, self-driving vehicles, and so on.

There is also economy of *scope*, where costs are lowered or production is increased by combining different, complementary activities. A classic example is an orchard, where there must be enough space between the trees to allow for light and air, in combination with sheep

grazing the grass in the fallow space between the trees. This also may best be done in collaboration between tree growers and sheep keepers.

While trust and resonance are part of fruitful collaboration, there remains an element of rivalry and the possibility that dependence is grasped as a basis for power play, to exert pressure and gain material advantage. That is why trust is accompanied by a degree of control, to hedge for that risk, until that risk becomes minimal, in habituation, deepening trust in mutual benevolence and solidarity. Trust will seldom be blind.

Questions

- Is collaboration between rivals viable, how
- Why are mammals at the north pole bulbous
- Do you profit from economies of scale, how
- In business, would you prefer a merger/acquisition or an alliance, under what circumstances
- Can trust survive in markets, how