

# The Hart asset at the heart of your organisation

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**Abstract:** What assets does a firm need to hold to develop a profitable business model? A ‘Hart asset’ is an asset that a firm cannot strategically afford a rival firm to own or control due to the risk of hold up, and therefore must be held within the firm, and upon which a profitable business model can be built. We tie the Hart asset to the problem of complementarities in profitable innovation, and conclude with an example Hart asset in digital platforms.

## Introduction

The economics of organisation has developed sophisticated analytic frameworks and tools to understand what determines how firms are sized and structured.<sup>1</sup> For the most part these tools are descriptive – they aim to explain why firms are the way they are. One of the assumptions in organisational economics is that firms take certain shapes for good reason, and that the job of the analyst is to explain, rather than direct. However, these tools also can be used for strategic guidance about how firms can change in response to external shocks.

In this paper we introduce the concept of a “Hart asset”, named after the 2016 economics laureate Oliver Hart, as a framework to understand decisions that firms need to make to sustain profitable business in times of change. A Hart asset is an asset, or set of assets, that for contract-theoretic reasons need to be held within the firm for two reasons: (a) to reduce exposure to opportunistic behaviour by contracting counterparties; and (b) to prevent maladaptation to changing circumstances in the light of incomplete contracts. Understanding a firm’s Hart asset provides a constraint and guide for how that firm can respond to change through industrial reorganisation.

## The firm as a nexus of contracts

In organisational economics, organisations are conceived of as being nexus of contracts. Those contracts are a combination of formal and informal agreements between the factors of production that provide inputs to the organisation and the organisational clients. The

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<sup>1</sup> For an overview of the field of organisational economics, see, e.g. Gibbons and Roberts (2013).

establishment of that nexus of contracts is an entrepreneurial activity, while the coordination of that nexus of contracts is a governance function.

The governance function ensures that the contracts within the nexus execute as intended – that parties to the contracts receive their promised outcomes (be they goods and services for clients, wages for employees, payments for suppliers, coupons for bond holders, and freecash flow for equity holders). Governance exists to constrain those individuals who may be in a position to subvert the operation of the nexus of contract for their own benefit.

Corporate governance, for example, is best defined by Shleifer and Vishny (1997: 737), “How do suppliers of finance control managers?”. Political governance revolves around question of how do voters control politicians? Public governance concerns how politicians control public officials. In this note we focus on non-political governance, although we expect that the Hart asset concept could be usefully applied to public sector analysis.

There are two broad reasons why a contract may not be executed as negotiated. *Opportunism* and *maladaptation* are likely to cause contract execution to deviate from their expected and negotiated outcomes. The work of Oliver Williamson has discussed both reasons, but focussed on opportunism. Oliver Hart has focussed on maladaptation.

Williamson (1985) has defined opportunism as “self-interest seeking with guile”. In the standard economic view individuals are self-interested, yet honest. Economic agents do not lie, steal, or cheat. While Williamson adds other variables – importantly asset specificity – to his analysis it is clear that opportunism is the determining factor in his theory:

‘Governance structures that attenuate opportunism and otherwise infuse confidence are clearly needed.’ (Williamson 1979: 242)

The implications of a lack of opportunism are quite profound – Williamson (1993) argues, for example, that “most forms of complex transacting and hierarchy vanish”.

Maladaptation relates to a “shifting contract curve”. Aoki (1983) suggests that a shifting contract curve is due to the “optimal” contract deviating from the agreed contract over time. As circumstances in the real-world change over time, so the contract that individuals would have entered into changes from the one that they did negotiate. This deviation between the negotiated contract and the otherwise ideal contract imposes costs on, at least, one of the parties to the contract. At this point, the adversely affected party may wish to renegotiate the contract – they may trust that the other party may do so – but could be subject to a hold-up problem.

### **Hart’s hold-up problem**

It is due to this potential for a hold-up to occur that Oliver Hart argues that there is more to the firm than simply contracting – there must be ownership of non-human assets. Hart’s insight builds upon conditions well explained by Oliver Williamson. Bounded rationality leads to incomplete contracting which can in turn result in maladaptation costs being incurred over

time. The presence of asset specificity makes re-contracting necessary (otherwise the firm could simply terminate the existing contract, with or without penalty, and put a new contract out to tender). The presence of opportunism makes the recontracting process expensive for the party experiencing the maladaptation costs.

In his Nobel Prize lecture Hart provides the following example:<sup>2</sup>

Consider a power plant that locates next to a coal mine with the purpose of burning coal to make electricity. One way to regulate the transaction is for the power plant to sign an arms-length long-term contract with the coal mine. Such a contract would specify the quantity, quality, and price of coal for many years to come. But any such contract will be incomplete. Events will occur that the parties could not foresee when they started out.

For example, suppose that the power plant needs the coal to be pure but that it is hard to specify in advance what purity means, given that there are many potential impurities. Imagine that ten years into the relationship, ash content is the relevant impurity and that high-ash-content coal is more expensive for the power plant to burn than low-ash-content coal but cheaper for the coal mine to produce. Given that the contract is incomplete, the coal mine may be within its rights under the contract to supply high-ash-content coal. The power plant and coal mine can, of course, renegotiate the contract. However, the coal mine is in a strong bargaining position. It can demand a high price for switching to low-ash-content coal. The reason is that the power plant does not have a good alternative: it may be very expensive for the power plant to transport coal from a different coal mine given that it is located next to this one.

This is an example of the hold-up problem. Once the two parties have entered into a contract and have become mutually dependent upon each other the “fundamental transformation” has occurred and a competition situation has become a bilateral monopoly situation. Hart identifies the challenge here as being that the mine owner has residual ownership rights over the mine. The owner gets to decide what quality coal is produced by the mine in the absence of any other contractual obligation. The solution that Hart proposes is that the power plant buy the coal mine. Ownership of the coal mine resolves the hold-up problem in favour of the power plant – but at the cost of blunting market incentives at the coal mine. In the Hart example, the power plant’s business model is to burn coal to generate, and then sell, electricity. In order to do so, it must own the coal mine. In principle, it should also own the generators.

### **The Hart asset**

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<sup>2</sup> Oliver Hart, 2016, Incomplete Contracts and Control, Nobel Prize Lecture, available at <https://www.nobelprize.org/uploads/2018/06/hart-lecture.pdf>

While Hart does not perform this particular exercise, it is possible to flip the analysis. What asset(s) does a firm need to own in order to develop a profitable business model? We define that asset as being the firm's "Hart asset". A Hart asset is an asset that the firm cannot trust someone else to own. It is the asset that cannot be divested without endangering the sustainability of the firm. In this story the firm becomes a nexus of contracts that maintains ownership of a Hart asset that can be leveraged into a profitable business plan.

It is important to note that ownership of the Hart asset *per se* is not the business model. The Hart asset will be a specific asset (asset specificity in Williamson's terminology) to the firm but it may not necessarily be the highest earning asset in the firm or be at the point of sale in the business model. The absence of ownership over that asset, however, ensures that the long-term profitability of the business model can be compromised. The entrepreneurial function then is two-fold:

- 1) identifying, developing or securing a Hart asset and,
- 2) developing a (profitable) business plan that leverages off the ownership of that Hart asset.

While the Hart asset is not the business plan, the business plan is constrained by the Hart asset. In this sense, the Hart asset helps understand from a contract-theoretic perspective a finding in the innovation literature around the realisation of profits from innovation. Teece (1986) identifies the pivotal role played by complementarities in innovation. As he notes, often highly innovative and value adding products fail to provide their innovators with profitable businesses. For innovations that are easy to imitate, the failure to develop complementary manufacturing capability before the innovation is developed can lead to competitors undercutting and releasing their own substitutable version of the innovation. As Teece (1986, p. 288) writes, "In almost all cases, the successful commercialization of an innovation requires that the know-how in question be utilized in conjunction with other capabilities or assets".

Yet where Teece places the core technological know-how (the innovation) at the centre of his firm, and complementary assets in support of that know-how, our framework centres the Hart asset. A strong business plan – the innovation – is the profit centre of the firm but those profits can only be realised through ownership of the Hart asset.

### **An example Hart asset**

The question becomes where we can see Hart assets in the wild. Consider the social media platform Facebook, where the Hart asset should be obvious. Facebook is a multisided market platform following Rochet and Tirole (2001) which facilitates exchanges between users (who want access to a social feed) and advertisers (who want to target advertising to users). Facilitating these relationships is the Facebook business plan, which is profitable. However, social media is a contestable market. Facebook has had numerous competitive challengers such as MySpace, Google Plus, Orkut, Friendster, and MSN Messenger. Many of these services substantially predated Facebook, which is an "imitator" in the Teece (1986) sense.

Facebook's Hart asset is neither its advertising network nor its social feed, but its identity management system. The advertising system that it has built could be outsourced and (perhaps less plausibly but still feasibly) its systems that allow users to share news, form groups and comment on articles. By contrast, the identity management system is at the core of Facebook's ownership model. With that identity management system Facebook is able to facilitate relationships between users – ultimately building out the social feed that attracts users to its website.

To emphasise: the identity management system is not its business plan. Facebook's profits come from matching advertising with social feeds. For the most part, a users' social graph does not directly inform that advertising product.<sup>3</sup> Facebook has built on its identity management system as a way to attract more users to its platform, for example by offering a single sign in service that can be implemented by non-Facebook websites. It is possible to imagine Facebook offering a service that allows other firms to develop social feeds off the back of its identity management system (competing with its front page) for a fee, but implausible to imagine Facebook handing off control of that system another firm.

## Conclusion

We have outlined the concept of a Hart asset, using the contract-theoretic theory of the firm developed by Oliver Williamson and Oliver Hart. A Hart asset is the asset that a firm cannot outsource. Hart assets have to be owned. A Hart asset is however not a business plan. We have used Teece's (1986) insights around the dynamic of innovation and its complementarities to explore how the Hart asset impacts competitiveness. It is our view that the Hart asset provides a concrete and powerful framework to develop firm strategy in the process of change, whether that change is due to innovation, external shocks, or evolving market conditions – or, in the current climate, all three at once.

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<sup>3</sup> A glaring exception to this is the Facebook Cambridge Analytica app scandal, see <https://techcrunch.com/2018/03/24/facebook-was-warned-about-app-permissions-in-2011/>

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