**Introducing the actors**

MagnetoCorp is a well-respected company that makes self-driving electric vehicles. In early April 2020, MagnetoCorp won a large order to manufacture 10,000 Model D cars for Daintree, a new entrant in the personal transport market. Although the order represents a significant win for MagnetoCorp, Daintree will not have to pay for the vehicles until they start to be delivered on November 1, six months after the deal was formally agreed between MagnetoCorp and Daintree.

To manufacture the vehicles, MagnetoCorp will need to hire 1000 workers for at least 6 months. This puts a short term strain on its finances – it will require an extra 5M USD each month to pay these new employees. **Commercial paper** is designed to help MagnetoCorp overcome its short term financing needs – to meet payroll every month based on the expectation that it will be cash rich when Daintree starts to pay for its new Model D cars.

At the end of May, MagnetoCorp needs 5M USD to meet payroll for the extra workers it hired on May 1. To do this, it issues a commercial paper with a face value of 5M USD with a maturity date 6 months in the future – when it expects to see cash flow from Daintree. DigiBank thinks that MagnetoCorp is creditworthy, and therefore doesn’t require much of a premium above the central bank base rate of 2%, which would value 4.95M USD today at 5M USD in 6 months time. It therefore purchases the MagnetoCorp 6 month commercial paper for 4.94M USD – a slight discount compared to the 4.95M USD it is worth. DigiBank fully expects that it will be able to redeem 5M USD from MagnetoCorp in 6 months time, making it a profit of 10K USD for bearing the increased risk associated with this commercial paper. This extra 10K means it receives a 2.4% return on investment – significantly better than the risk free return of 2%.

At the end of June, when MagnetoCorp issues a new commercial paper for 5M USD to meet June’s payroll, it is purchased by BigFund for 4.94M USD. That’s because the commercial conditions are roughly the same in June as they are in May, resulting in BigFund valuing MagnetoCorp commercial paper at the same price that DigiBank did in May.

Each subsequent month, MagnetoCorp can issue new commercial paper to meet its payroll obligations, and these may be purchased by DigiBank, or any other participant in the PaperNet commercial paper network – BigFund, HedgeMatic or BrokerHouse. These organizations may pay more or less for the commercial paper depending on two factors – the central bank base rate, and the risk associated with MagnetoCorp. This latter figure depends on a variety of factors such as the production of Model D cars, and the creditworthiness of MagnetoCorp as assessed by RateM, a ratings agency.

The organizations in PaperNet have different roles, MagnetoCorp issues paper, DigiBank, BigFund, HedgeMatic and BrokerHouse trade paper and RateM rates paper. Organizations of the same role, such as DigiBank, Bigfund, HedgeMatic and BrokerHouse are competitors. Organizations of different roles are not necessarily competitors, yet might still have opposing business interest, for example MagentoCorp will desire a high rating for its papers to sell them at a high price, while DigiBank would benefit from a low rating, such that it can buy them at a low price. As can be seen, even a seemingly simple network such as PaperNet can have complex trust relationships.

**A blockchain can help establish trust among organizations that are competitors or have opposing business interests that might lead to disputes. Fabric in particular has the means to capture even fine-grained trust relationships.**

Let’s pause the MagnetoCorp story for a moment, and develop the client applications and smart contracts that PaperNet uses to issue, buy, sell and redeem commercial paper as well as capture the trust relationships between the organizations. We’ll come back to the role of the rating agency, RateM, a little later.