**Week 7 Seminar Solutions**

1. Who will affected by *Guidance on Cryptoassets PS19/22*.

This guidance is relevant to:

* firms issuing or creating cryptoassets
* firms marketing cryptoasset products and services
* firms buying or selling cryptoassets
* firms holding or storing cryptoassets
* professional advisers
* investment managers
* recognised investment exchanges, multi-lateral trading facilities and organised trading facilities
* consumers and consumer organisations

This is not an exhaustive list, and it is likely that the consultation will be relevant to additional stakeholders.

2. What is the different categories of cryptoassets initially defined in the UK Cryptoasset Taskforce Report (CATF)?

These categories were:

* Exchange tokens: These are not issued or backed by any central authority and are intended and designed to be used as a means of exchange. They tend to be a decentralised tool for buying and selling goods and services without traditional intermediaries. These tokens are usually outside the perimeter.
* Utility tokens: These tokens grant holders access to a current or prospective productor service but do not grant holders rights that are the same as those granted by specified investments. Although utility tokens are not specified investments, they might meet the definition of e-money in some circumstances (as could other tokens). In this case, activities involving them may be regulated.
* Security tokens: These are tokens with specific characteristics that mean they provide rights and obligations akin to specified investments, like a share or a debt instrument (described in more detail in Chapter 3) as set out in the Regulated Activities Order (RAO). These tokens are within the perimeter.

3. What kinds of tokens are unregulated tokens? What are regulated tokens?

**Unregulated tokens**

* Exchange tokens

Exchange tokens as those types of cryptoasset that are usually decentralised and primarily used as a means of exchange. These tokens are sometimes known as ‘cryptocurrencies’, ‘crypto-coins’ or ‘payment tokens’. These tokens are designed to provide limited or no rights for tokens holders, and there is usually not a single issuer to enforce rights against.

* Utility tokens

Utility tokens as those tokens that provide consumers with access to a current or prospective product or service and often grant rights similar to pre-payment vouchers.

**Regulated tokens**

* Security tokens

Security tokens as those tokens that provide rights and obligations akin to specified investments as set out in the RAO, including those that are financial instruments under MiFID II. For example, these tokens have characteristics which mean they are the same as or akin to traditional instruments like shares, debentures or units in a collective investment scheme.

* E-money tokens

E-money tokens are tokens that meet the definition of electronic money in the EMRs. That is:

* + electronically stored monetary value that represents a claim on the issuer
  + issued on receipt of funds for the purpose of making payment transactions
  + accepted by a person other than the issuer
  + not excluded by regulation 3 of the EMRs

4. Do some research about Network effects for ICO.

Network effects describe the positive externalities observed in networks when the value of a product/service to a user increases as the number of users increases, and the potential links between participants grow for every new participant joining the network (Hendler and Golbeck, 2008). Existing theory on network effects suggests that "embeddedness" of network systems provides participants with unique opportunities and benefits derived from each other's participation, and firms organised through networks have higher survival chances than firms that are not (Uzzi, 1996).

In other words, the benefits a user enjoys from joining a network increase with the total number of users who are part of the network. This value proposition has first been quantified by Metcalfe’s law (the value of a network is proportional to the square of the number of users of the network) and Zipf's law (the value of a network is proportional to nlog n, where n is the number of users of the network) (Briscoe et al., 2007). Irrespective of how its value is measured, the existence of network effects is widely acknowledged.

ICOs enable value creation by design: through the formation of platforms based on distributed ledger technologies; the attraction of participants and users (effectively all ubscribers/tokenholders) and their possible interactions; and ultimately the inducement of positive network externalities on those platforms. These potential network effects increase the economic value of the platform itself and can have wider economic and social benefits.

In practical terms, the imposition of hard caps, which effectively create a tentative sale of tokens which will not be effectuated unless the cap is reached, ensures that a critical mass of users needs to be gathered before the project is launched. Positive network externalities are also evidenced by the strong positive correlation of ICO market values with the number of Twitter followers of ICO issuing companies (Benedetti and Kostovetsky, 2018), indicative of the value created when a platform reaches a critical mass of users.

5. Discuss the main costs of running an ICO.

* Technical fees include the creation of a token that will be used in the ICO and the development of the protocol on the basis of which the project will be run. ICO tokens are in their majority based on the ERC20 protocol on the Ethereum blockchain, which are simple to manipulate and inexpensive compared to the development of a native token on its own blockchain. Technical fees are also paid for the development of smart contracts which is the basis for any transaction on the platform to be executed. On-going technical fees will have to be paid to developers to audit the platform and the contracts on a recurrent basis, address bugs or weaknesses in the code and avoid any hacking.
* Legal fees are paid in exchange for advice around the regulatory framework applying to the offering, the drafting of appropriate language in the whitepaper (see ICO Primer in Annex) and other contractual and marketing documentation. Issuers can also pay for assistance in the drafting of a professional and credible whitepaper, which is becoming more important as the market becomes crowded and investors become more wary of scams. Other advisory services contracted for an ICO launch may include specialised companies undertaking verification and accreditation of token purchasers (KYC process).
* Marketing expenses have been important for companies wishing to stand out of the crowd and drive consumer interest, and have advertising, PR and social media campaigns, as well as innovative marketing tools. "Bounty programmes" have been designed by issuers to award tokens to social media influencers and marketers in exchange for promotion of their product/service. In some IPOs, up to 5% of all tokens are being reserved for such bounty programmes. Similarly, bonus structures such as size discounts, discounts for early investors or referrals are used to incentivise investors, and represent a cost to the issuer.

6. Explain the difference between ICO and VC.

High information asymmetry and high uncertainty, as documented in the organisational ecology literature and reflected in the risks linked to their “newness” and “smallness”, typically limit a start-up’s access to traditional financing sources. In contrast, VC firms have the capabilities required to deal with these factors and contribute to the management of start-ups.

Venture capital (VC) investment in blockchain-related projects has been used as a comparative metric to ICO issuance so as to depict the proliferation of ICOs as a financing vehicle for early stage financing of start-ups relative to the wider VC landscape. Such comparison, although powerful in showcasing the growth in ICO offerings, may be unjustified for a number of reasons.

VC funding can be, and has been in practice, complementary to an ICO offering. VC funds have participated in a number of ICOs offerings either at the pre-ICO stage by taking part in private pre-sales or by funding the expenses of an ICO. For example, in the Filecoin ICO, the issuer (Protocol Labs) raised USD 52 million in a pre-sale, a week before the launch of the public offering to investors including Union Square Ventures and Sequoia Capital venture funds.

Such complementarity should be sought by start-ups undergoing ICO offerings, in order to take advantage of the non-monetary backing provided by a VC fund. The non-monetary contribution of a VC consists of expertise, industry knowledge, connections and network of contacts, as well as managerial and strategic assistance. VCs provide "coaching" to start-ups and play an active role in the monitoring of a firm's evolution. This uniquely caters to the needs of start-ups at the early stage of their development and is missed by start-ups raising funds just through ICOs.

The founding team of a company is of paramount importance in both cases, and the expertise, prior experience and credentials of the founding teams is one of the success factors in both cases. It would, however, be more carefully scrutinised by a VC investor than it is by a retail token-holder, as will be the business plan of the start-up.

Similarly, VC funds undertake a rigorous due diligence process which analyse the management team, the proposed business plan and its viability, among other things. Due diligence in ICO offerings, on the contrary, is not undertaken in a systematic manner.

The undeniable comparative advantage of an ICO offering compared to venture capital financing from the perspective of both the investor and the entrepreneur is liquidity. Tokens issued in ICOs can be traded in secondary markets with immediate liquidity from the day of listing.

In contrast, VC investments are extremely illiquid and it can take several years for a fund to be able to exit the investment. ICOs give founders the possibility to "cash out" immediately upon raising financing for their company, although as we have discussed in Section 5.2 this may reduce the alignment of interests between the entrepreneur and the investors funding the company.

Recent academic studies on financing of entrepreneurial ventures by ICOs shows that in high volatility projects, ICO financing is expected to be more prevalent (if not the preferred source of) financing given that the VC investors would require a higher return to cover for such volatility. In the same vein, ICOs are shown to dominate VC funding for ventures which have a higher proportion of idiosyncratic risk.

Naturally, ICOs will be the preferred funding avenue for entrepreneurs as they can receive tokens without pledging any personal funds for the project. Indeed, academic research suggests that ICOs are preferred for projects with a high risk of failure and right-skewed payoff distribution, given that in case of some retention of ICO proceeds by the entrepreneur, the payoff for the entrepreneur is positive even when the project fails.

Entrepreneurs may decide to seek financing through an ICO instead of VC as a way to attract a consumer-base and build a network around the project instead of seeking a personal financial reward. While there is a fundamental difference between the two financing methods, the easier network effects may partly explain why ICO funding has overtaken VC funding in recent months. Rather than resorting to an ICO in the absence of other alternatives, companies may seek to fund their companies through token issuance with a view to create and monetise value from network effects.

It should also be noted that, according to market participants, some VC funds consider ICOs as a potential alternative exit option for their traditional VC investments.