**FET Consultation - template FET Flagships**

*-* ***please limit proposals to at most five pages*** *-*

**About you**

* What is your background? Are you submitting this proposal as an individual, or do you represent a community or institution?

I am Professor of Financial Economics at Loughborough University, UK. My primary area of research is financial infrastructure (payments systems, securities clearing and settlement) and financial technology.

I am submitting this proposal as an individual. A broader background can be found in this policy note of mine: <https://www.ceps.eu/publications/achieving-european-policy-objectives-through-financial-technology>

**What is the challenge and the vision?**

* What is the grand S&T challenge and its underlying vision and what are the main objectives your initiative would address? Why is this a grand S&T challenge and what makes it a "game-changer"?

*The grand challenge:* Universal Digital European Finance EDUF

*The vision*: moving ***all*** European finance – bank payments; bank lending; insurance; investment arrangements; securities and derivative transactions; servicing and portfolio management; foreign exchange between Eurozone and non-Eurozone member states – onto standardised pan-European virtual platforms.

*The objectives.* Europe has an historic opportunity for using technology to overcome the contractual and information barriers to the provision of financial services, dismantling remaining national and institutional impediments to supply and ensuring access to all with maximum competition and minimum exploitation of market power and information.

These are already agreed European policy objectives, but the central role of technology and standards in achieving them is not adequately appreciated or understood. We are not yet exploiting the synergies between “Digital Single Market” on the one hand and “Capital Markets Union”, “Banking Union” and “Monetary Union” on the other. Finance is a digital industry and so to fully achieve these objectives the end goal must be Digital Union, combining all of these under one coherent schema and with Universal Digital European Finance (EDUF) a key focus along with other industries such as telecommunications, internet commerce, and the employment of digital technologies in health, education and social security.

* What are the main technologies, including digital technologies[[1]](#footnote-1), which your initiative will advance?

This opportunity arises now because of the simultaneous maturing of a number of key technologies, such as distributed ledgers (brought to prominence by the cryptocurrency Bitcoin); mobile and internet money (Paypal, ApplePay, SamsungPay, AndroidPay); non-bank intermediation platforms including P2P consumer lending, business lending and invoice finance, and the rise of algorithmic transactions in capital markets. The private sector is mobilising, notably the cumulative $10bn of venture capital for FinTech largely raised by US firms. Europe has yet to play its own trump card, using the institutional mechanisms of H2020 FET and CET to achieve the standardisation that will make new digital finance, at global level, coalesce around European delivery models.

Underlying these technologies are key issues of identity and identifiers, including for individuals, firms, public agencies and contracts. This requires a major programme of work on digital financial identifiers, identifying what works well enough to bring on board the required critical mass of participation.

Identification can in turn promote standardisation and comparability of the wide number of metrics of risk, for example standardised credit metrics can support bank independent P2P and invoice lending for a range of smaller companies that struggle to obtain bank loans. These need to be investigated carefully on an application by application basis.

At the same time key aspects of law and regulation need to be examined, going back to ‘first principles’ and working out how laws and regulations can be redesigned to utilise and support the digitalisation of finance.

**Why is it good for Europe?**

* Is your initiative relevant for the European industry and what is its innovation potential that would benefit Europe's economy and/or society?

This proposal is central to achieving Europe’s growth potential, including the financing of innovative firms (Risk Finance), promoting employment and to achieving social and financial inclusion.

Rather than write a book, I will give one particular illustration, the challenge of supply chain finance especially for supply of goods and services between member states and from Europe into the global economy. These processes continue to be weighed down by complicated processes of data reconciliation, still often paper based, and reliance on third parties such as correspondent banks. The outcome is a substantial bias against smaller firms participating in European wide markets.

EDF, carried through fully at the level of supply chain information and documentation and funding, can transform the position of small firms, using virtual and internet marketing but old physical world delivery. Europe can have total transparency of contract, delivery accompanied by competitive supply of invoice based financing with seamless and low cost legal underpinnings.

* Are there existing international research initiatives linked to this proposal? How would this initiative position Europe with respect to other regions in the world?

There are, but fragmented and largely the work of passionate individuals. The Sloan Foundation in US has supported some initial work. There are limited studies within FP7 and announced H2020 calls to date: I challenge you to identify them, it is a long and tedious job.

Much more can done, ultimately initiatives along these lines can position Europe as the global leader in financial technology and its relationship to private and public sector economic activity.

**What would it take to do it?**

* What is the scale of the effort required to reach the objectives and how long will it take to do so?

Short term: remarkably little. What is needed is to make a start, to bring together European players to map out the terrain, identify the key measures and determined priorities and the road to follow.

Long term: this is substantial investment with even bigger payoff. To provide some sense of scale, looking at one particular market segment, recent work of mine (with co-author Michael Mainelli of Z/Yen) suggests that fully digital finance could remove €20bn per annum or more of costs from post-trade processing in global securities market, all money that can enhance returns to pensions and other investment products. But to achieve this €20bn per annum gain, would seem to require one time expenditures, mainly by private sector, of a similar or larger scale (the scale of investment is indeed one of the issues that needs to be researched). Expanded across all of EDUF at a global level but with European leadership, direct benefits are an order of magnitude bigger, perhaps €200bn per year, and the indirect benefits of unleashing the ties that prevent growth and development even bigger still. Gains of the order of 10% or more of global GPD while not yet established are conceivable.

* Why is Europe well positioned in terms of skills/expertise and capabilities, including industrial capabilities, to address the challenge and exploit the results? Which are the research communities to be involved?

My judgement is that this task is 20% technology per se (in particular cryptography and information security) and 80% process, of which perhaps 50% is business process and 30% law and regulation. The research initiative needs to involve therefore, not just engineers and technologists, but business school and economics such as myself, pariticipation from researchers and analysts in established financial institutions, challenger institutions, and regulators and central banks.

* Are there existing national or European research initiatives linked to this proposal? What is the added value for such an effort at the European level?

See my responses above.

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| ***How to submit your idea to our "Digital4Science" Platform?***[*Register to our "DIgital4Science Platform*](https://ec.europa.eu/futurium/en/user/register?flavour=digital4science) *and*[*Submit your idea (completed template)*](https://ec.europa.eu/futurium/en/digital4science/add/document?field_tags=1035)*Once your idea is submitted we will publish it on our*[*Digital4Science discussion forum*](https://ec.europa.eu/futurium/en/digital4science/discussions/FET%20flagships) *and it will be open for comments.* |

1. See in particular the EU's Digital Single Market Strategy (<http://ec.europa.eu/atwork/pdf/cwp_2016_en.pdf>)?  [↑](#footnote-ref-1)