

# COST Action Progress Report at 24 months

(14/09/2020 to 14/09/2022)

## CA19130: Fintech and Artificial Intelligence in Finance - Towards a transparent financial industry

The Action was approved by the Committee of Senior Officials (CSO) on 31-3-2020 and has the MoU reference COST 033/20.

This report shows the data entered into e-COST to enable the Action Chair to verify the completeness and accuracy of the report with the MC prior to submitting the report via e-COST in fulfilment of the rules for COST Action Management, Monitoring and Final Assessment.



## Action leadership and participants

### Leadership positions

Position	Name	Contact details	Country*
Chair	Prof Jörg Osterrieder	josterri@googlemail.com +41774692809	Netherlands

  

Position	Name	Contact details	Country*
Vice Chair	Prof Valerio Poti	valerio.poti@ucd.ie 00353-1-7168961	Ireland

### Working groups

#	WG Title	# of participants	WG Leader	Country*
1	Transparency in FinTech	50	Prof Wolfgang Härdle haerdle@hu-berlin.de	Germany
2	Transparent versus Black Box Decision-Support Models in the Financial Industry	57	Dr Petre Lameski lameski@finki.ukim.mk	North Macedonia
3	Transparency into Investment Product Performance for Clients	41	Prof Peter Schwendner scwp@zhaw.ch	Switzerland

### Other key leadership positions

Position	Name	Contact details	Country*
Science Communication Coordinator	Dr Alessia Paccagnini	alessia.paccagnini@ucd.ie	Ireland
GH Scientific Representative	Prof Branka Hadji Misheva	heb1@bfh.ch	Switzerland

\* The country displayed is:

- for the Action Chair, the country that nominated that person to the Management Committee before they were elected Action Chair;
- for the Vice Chair the country that nominated the person as a Management Committee Member,
- for all other leadership positions, if the person is a MC Member the country displayed is the country of nomination, otherwise it is the country of the person's primary work affiliation.

## Participants

COST members having accepted the MoU

<b>AL</b>	13/05/2020	<b>AT</b>	30/04/2020	<b>BE</b>	17/02/2021	<b>BA</b>	30/04/2020	<b>BG</b>	04/09/2020
<b>HR</b>	02/06/2020	<b>CY</b>	17/02/2021	<b>CZ</b>	14/07/2021	<b>DK</b>	28/05/2020	<b>EE</b>	04/05/2020
<b>FI</b>	02/11/2021	<b>FR</b>	05/05/2020	<b>GE</b>	12/04/2022	<b>DE</b>	08/05/2020	<b>EL</b>	22/05/2020
<b>HU</b>	13/05/2020	<b>IS</b>	05/05/2020	<b>IE</b>	29/04/2020	<b>IL</b>	11/05/2020	<b>IT</b>	12/06/2020
<b>LV</b>	12/07/2021	<b>LT</b>	17/05/2020	<b>LU</b>	30/04/2020	<b>MT</b>	22/02/2021	<b>MD</b>	17/10/2020
<b>ME</b>	19/05/2020	<b>NL</b>	25/06/2020	<b>MK</b>	07/05/2020	<b>NO</b>	06/05/2020	<b>PL</b>	30/04/2020
<b>PT</b>	28/05/2020	<b>RO</b>	10/06/2020	<b>RS</b>	27/06/2020	<b>SK</b>	29/04/2020	<b>SI</b>	27/05/2020
<b>ZA</b>	02/11/2021	<b>ES</b>	18/06/2020	<b>SE</b>	26/05/2020	<b>CH</b>	20/05/2020	<b>TR</b>	04/05/2020
<b>UA</b>	12/04/2022	<b>UK</b>	30/04/2020						

## Other participants

Institution Name	Country

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## Summary

**The main aim and objective of the Action is to**

establish a large and interconnected community across academia, public institutions and industry focusing on Financial Technology and Artificial Intelligence, improving transparency in financial services, especially in and through FinTech, in financial modelling and investment performance evaluation

**During its first two years the Action progressed the achievement of this as described below**

**The Action will implement the following measures in the coming two years to overcome any issues identified in this report as potentially endangering the achievement of the objectives of the Action**

**Action website**

<https://fin-ai.eu/>

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## Achievement of MoU objectives, deliverables and additional outputs/ achievements

### MoU objectives

Please self-assess and describe the level of achievement of each MoU objective. For any MoU objective that is 25% or less achieved, please add an explanation.

<b>MoU objective</b>	To develop blended approaches to evaluate innovative financial services and their providers, especially in the FinTech domain, building on Machine Learning methods, focussing on prediction (early warning) of operational fragility, fraudulent and illegal behaviour ranging from appropriation of loaned funds to money-laundering activities.
<b>Type of objective</b>	
<b>Level of progress</b>	76 - 100%
<b>Description of progress with achieving the MoU objective</b>	Test

<b>MoU objective</b>	The development of conceptual and methodological tools for establishing when black-box models are admissible <b>and</b> , to the extent possible, making them more transparent and/or replacing them with interpretable and explainable models.
<b>Type of objective</b>	
<b>Level of progress</b>	—
<b>Description of progress with achieving the MoU objective</b>	

<b>MoU objective</b>	To receive input from regulators and practitioners' communities and to validate results with regard to increasing transparency of artificial intelligence applications.
<b>Type of objective</b>	
<b>Level of progress</b>	—
<b>Description of progress with achieving the MoU objective</b>	

<b>MoU objective</b>	Pruning and improvement of the vast array of performance attribution models by contributing to the development of methodologies for reducing the false discovery rate in financial research and applied financial investment management.
<b>Type of objective</b>	
<b>Level of progress</b>	—
<b>Description of progress with achieving the MoU objective</b>	

<b>MoU objective</b>	Disseminate to the public and share with regulators the results on investment product performance evaluation.
<b>Type of objective</b>	
<b>Level of progress</b>	—
<b>Description of progress with achieving the MoU objective</b>	

<b>MoU objective</b>	Creation of the first European platform comparing the out-of-sample performance of
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	banks' investment products, insurance-linked investment products and asset management products available to the general public.
<b>Type of objective</b>	
<b>Level of progress</b>	—
<b>Description of progress with achieving the MoU objective</b>	
<b>MoU objective</b>	Create an excellent network of researchers in Europe with lasting collaboration beyond the lifetime of the Action.
<b>Type of objective</b>	
<b>Level of progress</b>	—
<b>Description of progress with achieving the MoU objective</b>	
<b>MoU objective</b>	Bringing technological, quantitative and economic researchers together, to tackle future research that can only be done in an interdisciplinary setting, and getting actively involved in the blockchain and FinTech communities across Europe, to constantly monitor developments, get input and disseminate results.
<b>Type of objective</b>	
<b>Level of progress</b>	—
<b>Description of progress with achieving the MoU objective</b>	
<b>MoU objective</b>	Bridging the gap between practitioners from the finance industry, academics and regulators by setting up a common knowledge exchange platform.
<b>Type of objective</b>	
<b>Level of progress</b>	—
<b>Description of progress with achieving the MoU objective</b>	
<b>MoU objective</b>	Transfer knowledge in terms of expertise, scientific tools and human resources across the different disciplines and between academia and industry.
<b>Type of objective</b>	
<b>Level of progress</b>	—
<b>Description of progress with achieving the MoU objective</b>	
<b>MoU objective</b>	Establish an inclusive community of researchers on methodological and technological themes in Machine Learning and Artificial Intelligence, to promote Early Career Investigators and increase their visibility.
<b>Type of objective</b>	
<b>Level of progress</b>	—
<b>Description of progress with achieving the MoU objective</b>	
<b>MoU objective</b>	Overcome the siloing of research topics by country and achieve geographical and demographical diversity, with special attention to COST Inclusiveness Target countries.

Type of objective	
Level of progress	—
Description of progress with achieving the MoU objective	

Mou objective	Prepare competitive European researchers for a fruitful career in an international environment through intensive use of Short Term Scientific Missions (STSM) and joint educational programs with industrial partners.
Type of objective	
Level of progress	—
Description of progress with achieving the MoU objective	

Mou objective	Maximize the job opportunities for PhD students and Early Career Investigators.
Type of objective	
Level of progress	—
Description of progress with achieving the MoU objective	

Mou objective	Disseminate the results of the Action's activities to the scientific community, European institutions and to the general public.
Type of objective	
Level of progress	—
Description of progress with achieving the MoU objective	

Mou objective	Significantly improve the gender equality in the fields of the Action.
Type of objective	
Level of progress	—
Description of progress with achieving the MoU objective	

## Deliverables

This section covers only deliverables that were foreseen for the Action, not additional outputs that were generated during the Action (these additional outputs will be added in the following section). Please select and comment on the progress with achieving each deliverable.

For deliverables that are:

- Delivered, please provide proof to enable the Action Rapporteur to confirm the delivery
- Not delivered but delivery is foreseen within 2 years please explain how the delivery will be achieved
- Not foreseen to be delivered please explain why not

<b>Deliverable</b>	A database which contains pre-ICO documentation and post-ICO performance (ROI and lifespan)		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	24

<b>Deliverable</b>	A database which contains data on crowdfunding/P2P platform features useful for rating platform integrity and to predict fraud		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	24

<b>Deliverable</b>	Discussion papers (DP) on the methodology for evaluating/rating ICOs and crowdfunding/P2P platforms and for detection/early warning about fraud-illegal behaviour with emphasis on the application of AI tools		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	36

<b>Deliverable</b>	A position paper and roadmap on mitigating risks connected with the increased use of digital assets		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	48

<b>Deliverable</b>	A discussion paper for possible approaches to building a statistically valid back-testing framework		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	24

<b>Deliverable</b>	Methodological discussion paper on the design of stress tests for the evaluation of AI and ML models under shifting financial conditions to improve the robustness of models		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	48

<b>Deliverable</b>	Position papers, aimed at regulators and policy-makers, on methodology (with examples of formal criteria) for testing AI techniques in real-time		

<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	36
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<b>Deliverable</b>	Report on good examples and best practices for a transparent finance industry with guidelines to improve transparency		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	12

<b>Deliverable</b>	An internal database of collected (scraped) financial time series from exchanges and regional consolidation platforms optimised for accessibility to all partners		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	24

<b>Deliverable</b>	Methodological discussion papers on AI models to generate “failed trials” of investment product producers and on quantitative strategies with the usage of the promising field of network data analysis		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	48

<b>Deliverable</b>	Four annual reports (for lay audience) distributed via local and national media		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	48

<b>Deliverable</b>	Key software (codes, packages) developed by each of the Working Groups in line with their objectives		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	48

<b>Deliverable</b>	Handbook and/or wiki page describing potential approaches to tackle risk management issues related to blockchain assets and crowdfunding/P2P lending		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	36

<b>Deliverable</b>	An edited volume containing scientific achievements of the Action (dummy text to delete)		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	48

<b>Deliverable</b>	Strategy to engage stakeholders in the Action (including revisions in month 24 and 36)		
<b>Progress with achieving deliverable</b>	—	<b>Month deliverable due</b>	6

## Additional outputs / achievements

### Co-authored Action publications

Please enter below ONLY publications (including publications that are submitted but not yet accepted):

- that are on the topic of the Action, and
- that are co-authored by at least two Action participants from two countries participating in the Action, and
- for which the Action networking was necessary.

Please pay special attention to the COST Excellence and Inclusiveness policy and ensure the inclusion of publications with authors from COST Inclusiveness Target Countries (ITCs), from the underrepresented gender in the Action and from Early Career Investigators/Young researchers.

	Bibliographic data	Countries participating in the Action among authors	Open Access	COST cited?	COST funds?	Relevance to H2020 Societal challenge	Peer Reviewed?

### Projects resulting from Action activities

Please enter below all the projects on the topic of the Action resulting from Action activities, involving at least one Action participant, and for which the Action networking was necessary.

The Action reported 0 project(s) and 0 proposal(s) resulting from the Action networking.

#	Title	Countries participating in the Action among proposers	Main proposer name	Funder	Amount	Call identifier	Relevance to H2020 Societal Challenge

### Other outputs / achievements

Please enter below any additional outputs/ achievements on the topic of the Action that contribute to the COST mission: "COST enables break-through scientific

developments leading to new concepts and products and thereby contributes to strengthen Europe's research and innovation capacities", and for which the Action networking was necessary (e.g. a patent, standards, white paper).

Output / achievement description	Dependence of achievement on the Action networking
test	High

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## Impacts

Please describe the impacts (the short- to long-term scientific, technological, and / or socioeconomic changes produced by a COST Action, directly or indirectly, intended or unintended) that have resulted, or might result, from the Action in the following table (one impact per line).

Description of the impact, i.e. what will change, and for whom, as a result of what the Action achieved	Type of impact	Timing of impact

Please describe how the Action is advancing the careers, skills and network of researchers, including ECIs (for example: joint supervision of graduate and PhD students, research exchanges not funded by the Action, collaborations, Training Schools with ECTS accreditation, joint projects and jobs prospects).

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## Dissemination and exploitation of Action results (other than co-authored Action publications listed previously)

Please describe the Action's dissemination and exploitation approach as well as all activities undertaken to ensure dissemination and exploitation of the Action results and the effectiveness of these activities.

### Dissemination and exploitation approach of the Action

#### Dissemination

##### Dissemination meetings funded by the Action

Title of Dissemination meeting	Meeting date	Meeting country	Action participant	Event name and hyperlink to the website	Title of presentation	Description of added value to the Action
N/A						

##### Other dissemination activities

E.g. participation to non-Action meetings, e.g. EU Parliament, meetings with policy makers, experts in the field, regional authorities.

Item/activity	Target audience	Outcome	Hyperlink
N/A			

#### Exploitation activities

Please describe below any activities undertaken to ensure exploitation (use, in particular in a commercial context) of the Action's achievements.

Item/activity	Target audience	Outcome
N/A		

## Other matters

This section is confidential to the Management Committee, the Action Rapporteur and the COST Association, and is not included in the version of the report that is published on the COST website.

### Difficulties in implementing the Action

If any difficulties are experienced in the implementation of the Action (e.g. imbalances of participation across the Working Groups, inactive country representatives) please describe these below. Please also describe the efforts made by the MC to address these.

### Endangerment Measures

Taking into account the issues identified throughout this report, please summarise the measures the Action will implement in the coming two years to overcome any issues identified as potentially endangering the achievement of the objectives of the Action.

### Suggestions for improvements to COST framework/ procedures

The mandate of the Scientific Committee includes providing advice to the COST Committee of Senior Officials on possible improvements to the COST framework. Please describe below any improvements that you believe should be made to the COST framework.

### Sustaining the network beyond the Action

Are there any plans to sustain the network beyond the end of the Action?

### Emerging topics/ developments in the field of the Action

Please describe any emerging topics or potentially important future developments identified during the Action and that could potentially be addressed by future COST activities such as Actions S&T Conferences or Exploratory Workshops.

## Annex 1: Types of objectives

### **1 - Coordination of scientific and technological activities at a European level**

- 1.a - Development of a common understanding/definition of the subject matter
- 1.b - Coordination of information seeking, identification, collection and/or data curation
- 1.c - Coordination of experimentation or testing
- 1.d - Comparison and/or performance assessment of a theory, model, methodology, technology or technique
- 1.e - Development of knowledge needing international coordination, pertaining to a new or improved theory, model, methodology, technology or technique
- 1.f - Achievement of a specific tangible output that cannot be achieved without international coordination (e.g. due to practical issues such as database availability, language barriers, availability of infrastructure or know-how, etc.)
- 1.g - Input to stakeholders (e.g. standardization body, policy-makers, regulators, users), excluding commercial applications
- 1.h - Input for future market applications (including cooperation with private enterprises)
- 1.i - Dissemination of research results to the general public
- 1.j - Dissemination of research results to stakeholders (excluding specific input in view of knowledge application)

### **2 - Community building**

- 2.a - Building a community around a topic of scientific and/or socio-economic relevance, allowing for knowledge exchange and the development of a joint research agenda
- 2.b - Building a community around a new or emerging field of research
- 2.c - Bridging separate fields of science/disciplines to achieve breakthroughs that require an interdisciplinary approach
- 2.d - Acting as a stakeholder platform or trans-national practice community, pertaining to a certain area of socio-economical or societal application, or to a certain market sector
- 2.e - Building capacity in the demographic inclusiveness of networks in science and technology, including representation of newly established research groups, Early-Career Investigators, the under-represented gender and teams from countries/regions with less capacity in the field of the Action

## Annex 2: Dimensions of successes

### 1 - Breakthroughs

- 1.a - Scientific breakthrough
- 1.b - Technological breakthrough
- 1.c - Breakthrough in socio-economic or societal applications

### 2 - Policy contribution

- 2.a - Contribution to regulatory policy
- 2.b - Contribution to environmental, infrastructural or agricultural policy
- 2.c - Contribution to economic or socio-economic policy
- 2.d - Contribution to social, cultural or legal policy

### 3 - Capacity building

- 3.a - Building capacity in an existing field of science and technology
- 3.b - Building capacity in bridging separate fields of science and technology
- 3.c - Building capacity in a new or emerging field of science and technology
- 3.d - Building capacity in valorising and implementing advances and applications in science and technology
- 3.e - Building capacity in the demographic inclusiveness of networks in science and technology, including representation of newly established research groups, Early-Career Investigators, the under-represented gender and teams from countries/regions with less capacity in the field of the Action

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