



MaaS demonstrations around Europe: Business, Technology, Users and Policy

Dr. Maria Kamargianni

Associate Professor of Transport & Energy, Head of MaaS Lab
MaaS Lab, Energy Institute, UCL



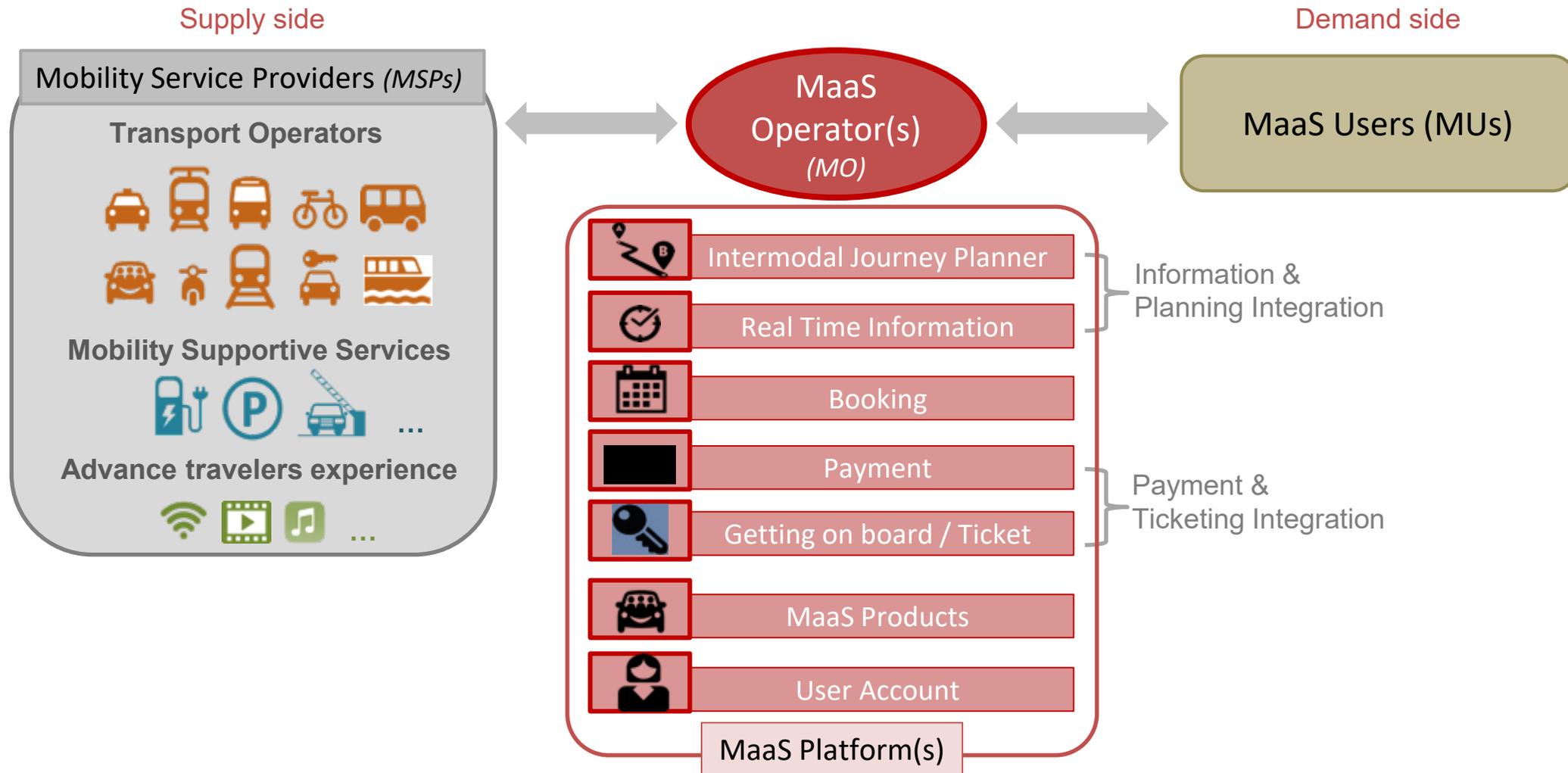
www.maaslab.org

Follow us:  @maaslab_org



MaaS Lab UCL

The MaaS Concept



The definition of MaaS

“Mobility-as-a-Service (MaaS) is a user-centric, intelligent mobility management and distribution system, in which an integrator brings together offerings of multiple mobility service providers, and provides end-users access to them through a digital interface, allowing them to seamlessly plan and pay for mobility.”

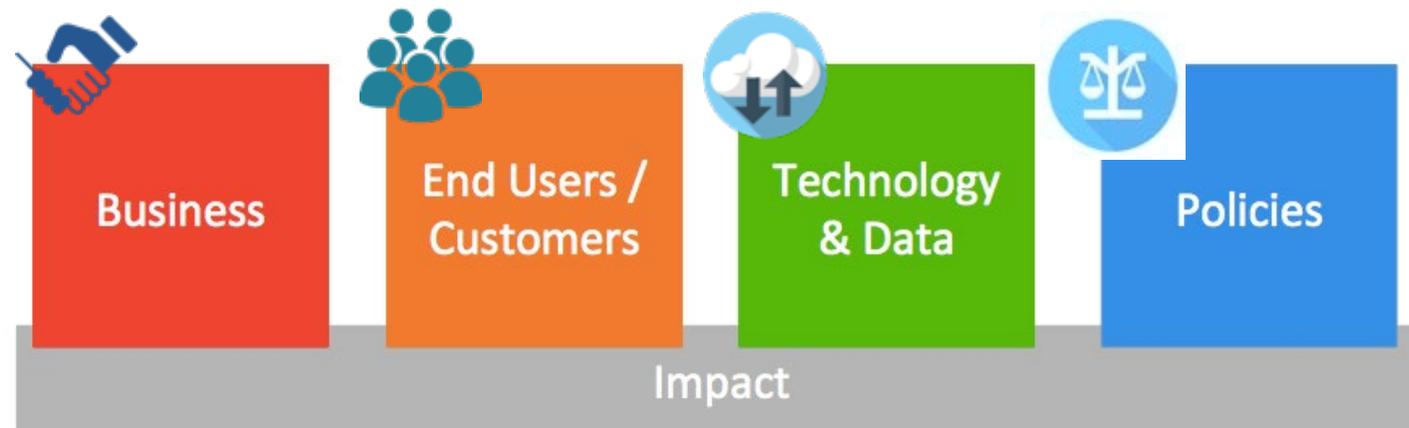
Just car-sharing is not MaaS

Just ride-hailing is not MaaS

MaaS is not an app. The app is just the digital interface.

An intermodal journey planner is not MaaS

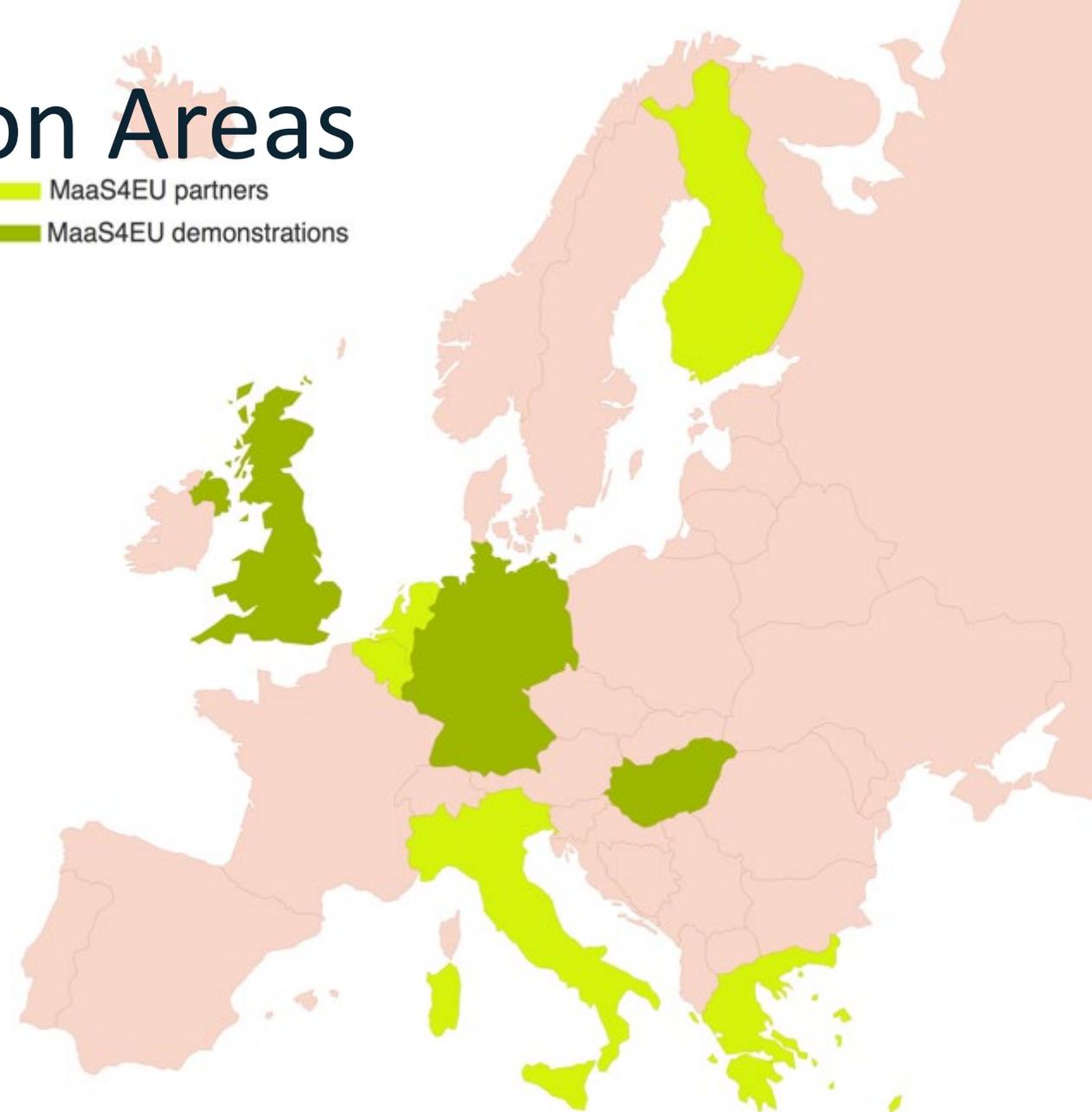
MaaS Pillars



MaaS4 Demonstration Areas

■ MaaS4EU partners
■ MaaS4EU demonstrations

- Greater Manchester
- Luxembourg - Germany
- Budapest



Hypotheses, Challenges & Lessons Learned

MaaS Operator Types

Initial assumption: The key consideration is that a **Public Transport Authority** is already responsible for all public transit modes/operators. Moreover, in most cases, it is the authority regulating and authorizing (or procuring) the operation of all the other private transport operators (i.e. taxi, car-sharing etc.). In addition, as a not-for-profit organisation, the PTA might be able to cultivate the trust needed for the uptake of the endeavour. However, on the downside, this might require an organisational change and flexible collaboration with other PTAs when addressing connectivity with other regions.

Tested in: Greater Manchester

Opportunities, Challenges & Lessons learned:

- PTA has already established relationships with all transport providers in the city. Easy access to them to discuss and explore new concepts.
- It takes time for a PTA to change organisational structures or secure approvals for a new service.
- Complexity in receiving the money from the MaaS products and distributing them to the MSPs.
- Difficult to operate outside its jurisdiction area; some areas left outside.

Hypotheses, Challenges & Lessons Learned

MaaS Operators Types

Initial assumption: A **transport operator** might also drive the MaaS Business Ecosystem by creating the conditions to attract other relevant service providers, who might appreciate the advantages of collaboration, as this may support cost savings in operation and co-investments. This effort is based on the notion of coopetition (collaboration between competing actors), as all the competitors in network industries are recognising the benefits of collaborating on innovative approaches.

Tested in: Luxembourg

Opportunities, Challenges & Lessons learned:

- It is too difficult for a TO to collaborate with competitors.
- Especially for TOs who offer a variety of mobility services, it is almost impossible to collaborate with others.
- Even setting up discussions with other MSPs was difficult.

Hypotheses, Challenges & Lessons Learned

MaaS Operators Types

Initial assumption: A **trailblazer of MaaS services private company**. A new actor dedicated to operate and drive the MaaS Business Ecosystem might be more equipped to support the above characteristics and promote trust, collaboration and coopetition amongst existing transport operators and travel service providers. Such an operator might also be in a better position to transverse existing boundaries and silos in the mobility sector. At the same time, a new actor might also face inertia and lock-in effects from previous efforts.

Tested in: Budapest

Opportunities, Challenges & Lessons learned:

- The beginning was quite difficult as there are no previous relationships between the MO and the MSPs.
- With the support of the PTA, communication channels were established with the MSPs.
- Wide participation of MSPs in the pilot.
- Some issues with MSPs in terms of the agreements and data sharing. It took time, but they were solved.

Lessons learned

- **Establishing communication channels with MSPs takes time**
 - New concept | Hypothetical and not concrete business models | Competition among MSPs
- **Agreements with MSPs are very challenging**
 - Need for clear and specific business models & clear incentives for the MSPs
 - Small scale MaaS pilots sometimes is a concern (limited number of customers;
 - Reluctance to devote resources with low return
 - Financial side and profit
- **MSPs worry about commoditisation**
 - Lose brand identity (especially big companies with mature platforms are not ready to give this up) | Small MSPs are positive
 - Concerns about user experience and liabilities
 - Exclusivity is a selling point for big MSPs

Lessons learned

- **Data sharing agreement between the MO and the MSP is critical**
 - Customer data is part of the MSP's business intelligence and future development:
 - Key interchange points (fleet management allocation and routes establishment)
 - Customer satisfaction
- **Value of co-creation among MSP who offer different services to create synergies**
- **Importance of clear goals and alignment with policy**

From the final interviews with MSPs who offered their services through the platform:

=> PTA is preferable to not act as a MaaS Operator, but rather sit above the MaaS Operator and help facilitate interaction between MO and MSPs;

=> PTA should provide policy goals/requirements to the MO to offer the services to end-users (i.e. Focus on walking trips/ first-last mile using certain modes etc.)

EU vs US: MaaS Business Ecosystem

Workshop during the IATBR 2018 conference in Santa Barbara, California | 20 participants from industry & academia

EU: the role and participation of PTAs is considered critical for a successful deployment of MaaS.

USA: PTAs have not that much power and emerging mobility service providers are more likely to be the champions of MaaS.

Challenges & Lessons Learned

- Several operators do not have the APIs needed to integrate to a MaaS platform (including booking, ticketing, payment, timetables)
- Reluctant to share access to APIs if they were available
- Payment systems – MSPs wanted to be in control of this (despite technology exists)
- Paper ticketing in some modes of transport – be ready to use legacy systems as we transition towards MaaS
- Pilot app
 - Payment was not an option for all modes
 - Still limited integration of services into the app

Challenges & Lessons Learned

- **Importance of information provision and data sharing**
 - Live data and updating information regarding travel routes
- **Engage early with technology (basis for the rest of the solution)**
- **Flexibility with regards to implementation of different operators' services - Interoperability** (difficulty to get all on board with the same systems)

Challenges & Lessons Learned

- **Recruiting users to participate**
 - Pay their own money for this
 - Additional effort required (service was accompanied with surveys)
- **The benefits of MaaS are difficult to be processed by end users before they use a MaaS service**
 - Brand new solution
 - Information and explanation regarding what MaaS is and the potential benefits
 - Too many mobility apps
- **Promising concept once it is explained: majority of end users like the idea**
- **Difficulty in competing with pricing from existing mobility services**
 - Initial fears of locked-in to subscription services

Challenges & Lessons Learned

- **Once they used the MaaS4EU app and had experience they were positive towards using such a service in the future**
 - Young professionals who do not own a car are the most popular user group to target
 - Most of those who already own a car or a bike do not find high value in this service
- **They had the opportunity to use modes that they did not consider before (demand management techniques)**

MaaS and COVID-19

- **Opportunity for MaaS to support both public authorities and travellers through enhanced data**
 - Capacity information (how full are services?) to reassure passengers; safety information regarding precautions on different modes.
 - Availability of DRT and notifications for users (live changes to routes; event-management)
 - Potential support for tracing COVID-19 transmission

Challenges, Lessons Learned

- **Passenger rights**
- **Liability**
- **Lack of data availability / APIs (openness/sharing requirements)**
- **Data interoperability**
- **Possibility to re-sell tickets in several occasions**
 - In some occasions, when this is possible, the re-selling prices are higher

Challenges, Lessons Learned

- **Clear regulation over new modes introduced**
- **Public authorities should act as bodies overseeing transition to MaaS**
- **Help organisations to work together to deliver MaaS**
- **Support open engagement**
- **Ensure funding reaches the right modes and supports their integration**

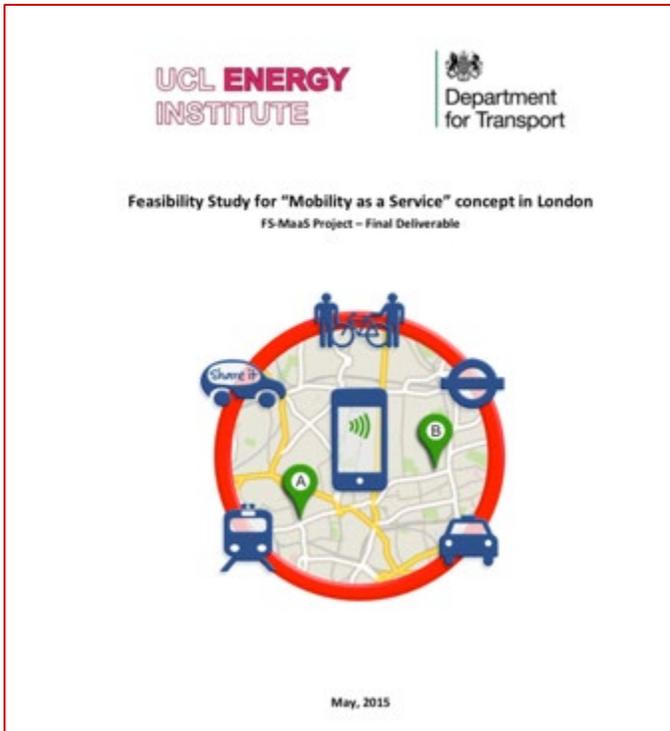
Checklist for cities

Domain	Item	Yes/No
The MaaS Operator should:		
End-user	Ensure that the service provides equal access to all and does not discriminate against anyone	
	Provide an easily accessible and available customer service channel	
	Have in place clear procedural channels to address any complaints or issues that are raised	
	Have in place a clear policy for compensation or reimbursement for unsatisfactory services or when the trip is not carried out as planned	
	Provide clear and fair reasons for the provision or denial of service	
	Offer services in the local language(s)	
	Provide accessibility and assistance at no additional cost for disabled passengers and passengers with reduced mobility	
	Provide information before purchase and at various stages of travel	
	Give the consumer clear, accurate and consistent information so as to give the consumer the power to make decisions	
	Fulfil the transport contract in case of disruption: mechanism for rerouting and rebooking	
	Provide clear and consistent information regarding the fares and fare structure for services offered	
Understand the requirements and demands local users would have of the service in terms of travel patterns and habits to provide worthwhile services		
Commercial	Adhere to EU Competition law under which the following practices are prohibited	
	Clearly define and agree roles and responsibilities in the provision of services with local operators through service agreements and legal contracts	
	Align with the European standards of fare management systems of ISO EN 24014-1:2015	
	Align with local regulations and requirements for travel and guidance from national and public authorities	
Technical	Provide a reliable platform with mechanisms in place to deal with system failures	
	Ensure services are provided via multiple platforms	
	Provide secure payment options	
Safety & Security	Provide privacy policy that is available and accessible to users	
	Be in line with GDPR in terms of data storage and protection	
	Ensure that no personal data is used without explicit consent from the user. Consent must be freely given, with clear explanation of what data is being collected, who is collecting the data and what the data will be used for	
	Provide the option for users to opt-out from the data being collected	
	Carefully select operators to work with to make sure end-users are provided with a safe and secure service at the end point	
	Be prepared to comply and support changes towards public safety requirements and suggestions from local and national authorities	

Take aways

- If a MaaS service/business model does not work in one area, it does not necessarily mean that it will not work in another areas
- Not one MaaS solution for all
- MaaS is a general concept that can be adapted to the needs of any local or national and international content

More Information



You can find more information at: <https://www.maaslab.org/projects-2>



MaaS
Lab



www.maaslab.org

Follow us:  @maaslab_org

 MaaS Lab UCL

Thank You!

Maria Kamargianni

m.kamargianni@ucl.ac.uk