



NEMODE Network+ Research Call

Call for Pilot Studies

Data-driven Economic Models in the Digital Economy

Closing date: 17:00 (UK time) on 28th January 2013

Awarding date: 1st March 2013

Interim report delivery date: April 15th 2013

Final report delivery date: 28th October 2013

Summary

Applicants are invited to apply for a short-term pilot study funding from the RCUK Digital Economy Theme (DE) NEMODE Network+. It is anticipated that a single pilot study will be selected, to last for no longer than 6 months in duration and is designed to further develop theoretical insights around *Data-driven new economic models in the Digital Economy*.

Background – Digital Economy

The Research Councils UK Digital Economy (DE) Theme is supporting research to rapidly realise the transformational impact of digital technologies on aspects of community life, cultural experiences, future society, and the economy.

To achieve this DE brings together a community of researchers (from diverse disciplines including social science, engineering, computer science, the arts and medical research) and users (people, business, government) to study, understand and find solutions to real problems.

The DE Theme has recently formed four 'challenge areas' and associated four networks: Communities and Culture; Sustainable Society; IT as a Utility; New Economic Models. This call focuses on the New Economic Models Network (NEMODE).

For more information please refer to the following websites:

NEMODE: <http://www.nemode.net/>

RCUK DE : <http://www.rcuk.ac.uk/research/xrcprogrammes/Digital/Pages/home.aspx>

Background- DE New economic models Network +

NEMODE's research builds on existing research in business models, and has as the 'system in focus', the value constellation and the attendant economic models.

The business model considers such questions as how value is created and captured (Teece 2011). The economic model addresses issues around the structure, conduct and performance of firms in the market and considers new opportunities and new markets and the consideration of who does what and who gets what (Jacobides 2006).

NEMODE's research domain is multi-disciplinary; it includes for example, considerations of the latest technological developments through computer science, operations research and data analytics, marketing, social anthropology, behavioural psychology and operations management.

NEMODE will deliver among others: (1) A virtual centre of excellence for the field to inform the development of policy, (2) An increase in public awareness which would help stimulate new business opportunities, (3) The establishment of an internationally leading community of scholars and major whose research interest is in new economic models and their relationship to the digital economy.

Background- Data-driven business models

We live in an era of big data – often characterized in terms of the 3Vs – volume, velocity and variety. Three simple examples illustrate the phenomenon. Volume - Tesco has data on the shopping habits of 15 million customers going back 20 years. Velocity - Twitter receives around 12 terabytes of tweets every day. Variety - over 200 million photos are uploaded to Facebook each and every day. These 3Vs neatly encapsulate the reasons why we are experiencing a data explosion, an explosion that is resulting in interesting developments in consumer markets. Increasingly firms are using the data they can access to develop new insights about their customers and their behaviours. Supermarkets analyse spending patterns, trying to work which bundles of products consumers tend to buy. Entertainment outlets use data on who is visiting their park to plan resource allocation and ensure that VIPs get preferential treatment.

Beyond consumer markets, big data is increasingly making its presence felt in the business-to-business and business-to-government sectors (McKinsey 2011). Work on smart cities – including using Twitter posts to monitor the state of urban infrastructure – is becoming commonplace. Some organisations are even innovating their whole business models, creating new services through the application of big data (McKinsey). Vestas – a wind turbine manufacturer, for example, has spent 12 years buying data on global wind flow patterns. Vestas uses these data to model how wind flows around the world and now advise their customers on where to locate the wind turbines they purchase to ensure the most efficient energy production through the turbine's life. In essence they are using big data to create new sources of value and competitive advantage. Recent developments in European regulation mandate the deployment of smart metering infrastructures in electric grids (EC 2012) in which big data technologies will play an important role as enablers.

As data-driven strategies take hold, they will become an increasingly important point of competitive differentiation. According to a McAfee (2012) companies that inject big data and analytics into their operations show productivity rates and profitability that are 5% to 6% higher than those of their peers (McAfee 2012).

A recent report prepared by the world economic forum (WEF 2012) identifies uses for Big Data for economic development purposes (e.g. health care, micro finance, education, agriculture). The same report emphasizes the importance of developing adequate business models providing appropriate incentives for private-sector actors to share and use data for the benefit of society.

This call focuses on two main questions, (1) the question of how big data influences business and economic models and (2) what kind of business and economic models are required to articulate emerging data ecosystems as depicted in the following figure.

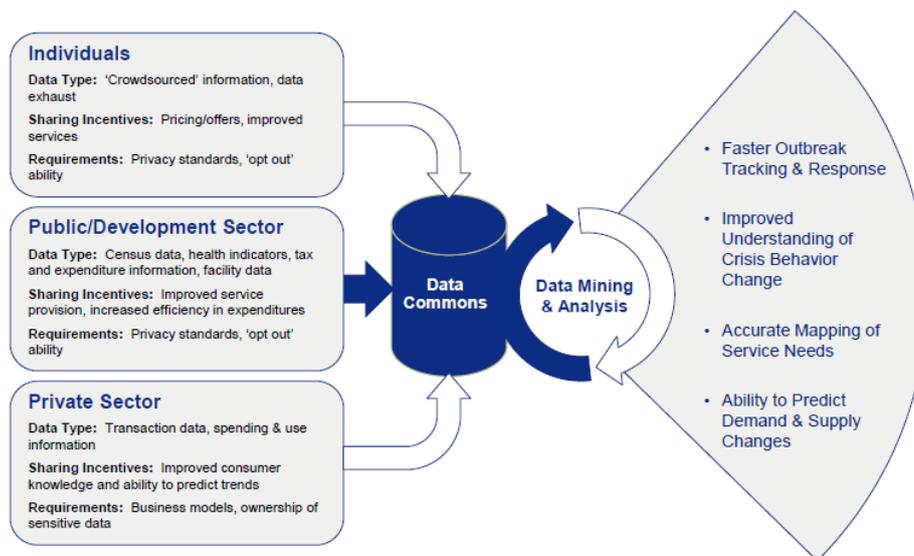


Figure 1. Data Ecosystems (source. World Economic Forum)

With regards to the first question, moving beyond the use of big data in consumer markets, we are interested in commissioning research that explores the role big data is playing today and is likely to play in the future in enabling new economic and business models (LRP 2010).

With regards to the second question we are interested in commissioning research that explores the potential application of current business model implemented by internet companies (e.g. Google search, Apple Appstore, Twitter) in the realm of these data ecosystems.

Themes for this call:

Despite the widespread interest in the phenomenon of big data, there is still relatively little discussion of the role big data is and will play in enabling economic and business model innovation in the Digital Economy.

This call is especially interested in the development of research concerning:

1. The role of big data in enabling economic and business model innovation.
2. The constraints and barriers to exploitation of the value created by the use of big data in economic and business model innovation.
3. The future potential of big data in economic and business model innovation, especially given the increasing shift to social and unstructured data.

We anticipate that the output from the research will be a report including cases studies etc., however we are willing to discuss innovative forms of output including videos, workshops etc. Any research publications emerging from this work must acknowledge NEMODE. The lead investigator will also be expected to present their findings at a NEMODE workshop.

Funding available

The project shall be funded for up to a maximum of 6 months with £50,000 available to fund the pilot study (Funded at 80% FEC according to Research Council funding regulations). Proposals should focus on exploring and developing research ideas and also should also hold the potential to indentify future key research challenges in the context of new economic models in the digital economy (NEMODE) and they are likely to inform both subsequent NEMODE calls and wider RCUK DE themes.

Resources that can be requested under this call include:

- Investigator and researcher time;
- Travel and subsistence appropriate to delivery of the project;
- Conference and publications costs (e.g. open access journals)
- Equipment

Applying and Submitting

Applications should address the following questions:

- 1) Aims, Objectives and Scope of Work:** Outline the scope of the project, ensure you clearly outline the main aims and objectives and how these will be achieved in the timescales
- 2) Expertise and Project Management:** Outline the applicants' relevant experiences and qualifications
- 3) Digital Economy:** Briefly outline how the proposal fits within RCUK Digital economy
- 4) Further Funding:** Briefly describe the teams approach to attracting further funding upon completion of study
- 5) Impact:** Describe the impact of the work
- 6) National Importance:** Describe in what way this work is of national importance
- 7) Justification of Resources:** Briefly outline how you anticipate spending the award. Eligible costs will be in line with Research Council funding guidelines and accordingly they will be at 80% FEC.

Questions 1 to 6 must fit within 3 pages.

Projects are limited to **6 months** in duration

Successful applicants will be notified in early March 2013, and should commence work within 1 month of award.

Please state clearly at the top of the first page the following details: PI Surname, PI First Name, Institution, Project Title, Relevance to call theme and all relevant contact details from the PI.

Applications should be submitted by e-mail to K.V.Alves@exeter.ac.uk

Assessment process for applications

The assessment of these proposals will be a two stage process outlined as follows:

Stage 1: Early stage assessment will be made by the NEMODE team to assess its fit to the call criteria. All proposals that don't address the call will be unsuccessful at this stage.

Stage 2: A Peer Review panel from the NEMODE academic community will assess proposals according to the criteria below. The proposals will be scored against each of these criteria and ranked and the proposal that is rank 1st will be selected for the award. It is anticipated that only one award will be made.

All candidates will be informed of the results.

Assessment Criteria

Aims, Objectives and Scope of Work: The research outlined demonstrates a clear development of appropriate research questions with clear aims and objectives that can be realistically delivered in the proposed timescales and budget. We will be looking for a proposal that demonstrates excellent novel research focussing on the key areas outlined in the call.

Quality and Innovation: A strong clear proposal that is technically sound. In addition the proposal is clearly innovative and demonstrates new methods and ideas for addressing the research requirements

Expertise and project management: The lead candidate has relevant expertise and can demonstrate academic excellence in this research area. In addition the research team is an appropriate group with the necessary experience to address the scope of the work and the team has clearly identified the project management, project plan and responsibilities.

Does this address Digital Economy?: Proposal has the potential to inform future research challenges for New Economic Models in the Digital Economy and addresses wider Digital Economy needs and objectives.

Impact and National Importance: The scope of work outlined has potential strong impact at a number of levels and demonstrates value to nationally important topics

Engagement:

As a winning proposal, the team's involvement with the project is central to NEMODE priorities. It is expected that the winning team will have a NEMODE mentor and that they will engage with the core NEMODE team and meet regularly with their mentor. It is further expected that the winning team will also progress the work through future RCUK funding.

Additional Grant Terms and Conditions:

Awards will be made under RCUK standard terms and conditions. Please note that this award is a contribution towards the incurred costs of a project activity from an existing RCUK award.

Please ensure that no commercial in confidence information is provided as part of your proposal.

Key dates

Deadline for applications for pilot studies, submitted by email to K.V.Alves@exeter.ac.uk

17:00 28th January 2013

Pilot studies awarded: 1st March 2013.

Eligibility

As this call is a targeted funding opportunity provided via RCUK funding, higher education institutions, and some research council institutes and independent research organisations are eligible to apply. A list of eligible organisations to apply to RCUK is provided at:

<http://www.rcuk.ac.uk/research/Pages/Eligibilityforrcs.aspx>

Contacts

For further information on the NEMODE Network+

<http://www.nemode.net>

For further details or to discuss your proposal, please contact:

NEMODE Network+ K.V.Alves@exeter.ac.uk

References

EC (2012). 2012/148/EU: Commission Recommendation of 9 March 2012 on preparations for the roll-out of smart metering systems. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32012H0148:EN:NOT>

IBM Institute for Business Value & University of Oxford (2012) – Analytics: The Real-World Use of Big Data.

Jacobides MG, Billinger (2006). Designing the boundaries of the firm: From “Make, Buy, or Ally” to the dynamic benefits of vertical architecture. *Organization Science* 17: 249-261.

McKinsey (2011). Big data: The next frontier for innovation, competition, and productivity. Report, McKinsey Global Institute

Teece, D. J. (2011). *Dynamic Capabilities And Strategic Management: Organizing For Innovation And Growth*, Oxford University Press, Oxford.

MMcAfee A., Brynjolfsson E.(2012). Big Data: The Management Revolution. *Harvard Business Review*. Oct 2012.

WEF (2012). Big Data, Big Impact: New Possibilities for International Development. *World Economic Forum Report*. 2012.

LRP (2010). *Business Models*. Long Range Planning Special Issue. April/May 2010.