Background

Industry and manufacturing are changing with the advent of smart digital, autonomous and intelligent technologies. Values for manufacturers are changing from production to technological knowhow and design; ownership models are changing from outright ownership to collaborative and agile partnership; media are continuing their shift from physical to digital; there is an increasing focus on distribution of work and service; and the partnership between the manufacturing sector and the technology sector is increasingly key. This shift is taking place in the societal and business context of the UK in the 21st Century. In order to harness the potential from this shift, the changes in human skills, capabilities and working environments needs to be considered, alongside the development and change in business models that underpin industry and innovation.

Changes to future industrial systems in the digital age demands funded research in order to ensure that the UK is well placed within an international context to respond to the challenges presented from industry and to implement new science and engineering into real world systems as quickly and effectively as possible.

The Network Plus Connected Everything: Industrial Systems in the Digital Age is funded by the EPSRC Manufacturing the Future challenge theme, addressing the area of Digital Manufacturing. There is a particular focus on ensuring that challenges addressed within Connected Everything are driven by the current and future industrial context. Connected Everything is bringing together core colleagues from the Manufacturing, Digital Economy, Design, Computing, Human Factors and Business communities to build new collaborations between leading academics and industry partners. It is:

a) Identifying relevant elements from these existing activities to conduct international benchmarking and establish the UK lead in specific elements of relevance to Future Industrial Systems in the Digital Age;
b) Enhancing cross-sectorial learning and fertilisation; and
c) Identifying new, discipline-bridging, agenda-setting opportunities for feasibility studies leading to scientific insight and future platforms and funding applications from national and international funders.

Feasibility study funding call

Working in partnership with the HVM Catapult, Connected Everything is looking to fund a second round of feasibility studies. Projects can be between 6 and 18 months in length, and should complete before the end of June 2019. The expectation is that we will fund up to 5 projects of up to a maximum of £60,000 (80%FEC) per project.
Connected Everything has defined a set of key thematic areas, which can be used to guide the development of project proposals:

- Industrial Internet of Things
- Cyber-physical systems
- Data analytics and decision making
- The future industrial worker
- Service design and customisation
- Design for future manufacturing
- Systems analysis and control

As they are partners in this funding call, submissions that focus on key priority areas identified by the HVM Catapult will also be considered.

**Digital Manufacturing Industrial Opportunities**

<table>
<thead>
<tr>
<th>Collaboration across value chains</th>
<th>Dynamic Supply Chains</th>
<th>Product Co-creation</th>
<th>Manufacturing Driven Design</th>
<th>Design &amp; Certification Based on Digital Models</th>
<th>Environmental and process control</th>
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<tr>
<td>Dynamic Scheduling (Logistics and Capacity)</td>
<td>Flexible Manufacturing</td>
<td>Assisted Manufacturing</td>
<td>Knowledge Capture and Management</td>
<td>Through Life Engineering Services</td>
<td>Tracking, traceability and product digitisation</td>
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<tr>
<td>New Customer / Consumer Services</td>
<td>New Customer Focused Business Models</td>
<td>Supplier Transformation</td>
<td>Manufacturing as a Service</td>
<td>Manufacturing Technology Development</td>
<td>Manufacturing Brokerage and Customer as a Designer</td>
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**What is the aim of the funding?**

The aim of the feasibility studies is to enable cross-disciplinary, foresight, speculative and risky early-stage research, although building a demonstrative prototype is also welcomed. We are looking at funding pre-Responsive Mode proposals. Applications from early career researchers will be particularly encouraged, and projects will also be asked to ensure that their project involves collaboration with industry partner(s). We are keen to support collaborations that would otherwise not happen.

Details of the six projects funded through the first funding call can be could at: [https://connectedeverything.ac.uk/activities/feasibility-studies/](https://connectedeverything.ac.uk/activities/feasibility-studies/)

**Application Process**

Awards will be made via short written application, followed up by a “Dragons’ Den” style pitch, reviewed by a multidisciplinary panel including representatives from industry. Each feasibility study will be expected to deliver a discipline-bridging state-of-the-art
review, early stage concept development, or demonstrator technology focussing on highlighting the transferability of technology concepts from other domains to manufacturing and industry.

Successful applicants will be expected to attend network events and will be required to present project updates at the remaining two Network Plus annual conferences. In addition, there is a requirement that presentations on the successful projects are made at a kick off meeting, likely to be held on Wednesday 6 December 2017 at the University of Nottingham.

**Selection criteria**

Applicants should consider that the following criteria will be used by the review panel when assessing the proposal:

- Multidisciplinary and clear demonstration of “discipline-bridging” through activity;
- Involvement of industry stakeholders;
- Involvement of early career researchers;
- Potential for development of future funding applications from EPSRC (responsive mode), Innovate UK or Horizon 2020;
- Demonstration of transfer of concepts from other domains to manufacturing;
- Potential to lead to strong dissemination materials;
- Paths to accelerate impact of research to ensure rapid transfer to industry, particularly in collaboration with HVM Catapult.

*(Note: not all criteria will be relevant to all)*

**Key dates**

<table>
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<tr>
<th>Date</th>
<th>Event</th>
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<tr>
<td>28 July 2017</td>
<td>Call for proposals goes live</td>
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<tr>
<td>15 September 2017</td>
<td>Virtual Q&amp;A information session</td>
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<tr>
<td>29 September 2017</td>
<td>Deadline for submissions</td>
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<tr>
<td>27 October 2017</td>
<td>Invitations to Dragons’ Den Day issued Unsuccessful proposals advised</td>
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<tr>
<td>13 November 2017</td>
<td>Dragons’ Den Day</td>
</tr>
<tr>
<td>22 November 2017</td>
<td>Successful proposals announced</td>
</tr>
<tr>
<td>06 December 2017</td>
<td>Kick off meeting (University of Nottingham)</td>
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<tr>
<td>January 2018</td>
<td>Feasibility studies begin</td>
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All feasibility studies should have completed before June 2019.
Eligibility

Guidelines on eligibility can be found here. Eligible organisations include all UK Higher Education Institutions that receive grant funding from one of the UK higher education funding bodies, along with research institutes for which the Research Councils have established a long-term involvement as a major funder. Other independent research organisations (IROs) may also be eligible and a list of such organisations is available here.

What can the funding be used for?

The budget outline for the proposed feasibility studies can include investigator/researcher time, travel and subsistence appropriate to delivery of the project, and small scale consumables. Equipment is eligible following EPSRC standard conditions: http://www.epsrc.ac.uk/research/facilities/equipment/

As the grant holder, the University of Nottingham is responsible for allocating funding to successful proposals and will reimburse subcontracting organisations at 80% full economic costing. Academic institutions will be required to itemise bills based on 100% FEC and then invoice at 80% FEC.

Submitting proposals

Feasibility study applications should be submitted, using the application form provided, via email to moira.petrie@nottingham.ac.uk by 11.59pm on Friday 29 September 2017.

Proposals for feasibility studies should include, but are not limited to, the following content:

- Project Title
- Lead organisation
- Details of the project team, including industry partners. Please indicate which members of the academic team are early career researchers.
- Start date and duration.
- Context, aim and objectives and benefit of the work.
- A statement of the novelty of the proposed work.
- An outline project plan
- What are the tangible deliverables of the feasibility study?
- How could further funding in this area be obtained?

References can be included and will not be counted in any word count.

A breakdown of the allocation of the funds with a short justification for each category is also required. The categories are:

- Directly Allocated
- Directly Incurred
- Indirect Costs

The budget should be submitted via a separate template and be accompanied by a one page justification of costs document.

The application form and budget template can be downloaded at: http://connectedeverything.ac.uk/activities/feasibility-studies/second-call-for-proposals
Further Information

If you have any questions regarding this call for proposals, please contact the Connected Everything Network Plus Manager, Moira Petrie (email: moira.petrie@nottingham.ac.uk, telephone: 0115 82 83077).