UK COMPUTING RESEARCH COMMITTEE

UKCRC/2013/3

Department for Culture, Media and Sport, Classifying and Measuring the Creative Industries

UKCRC Response

The UK Computing Research Committee (UKCRC), an Expert Panel of BCS The Chartered Institute for IT, the Institution of Engineering and Technology and the Council of Professors and Heads of Computing, was formed in November 2000 as a policy committee for computing research in the UK. Its members are leading computing researchers from UK academia and industry. Our evidence reflects the experience of researchers who each have an established international reputation in computing.

One of the major changes proposed for the new classification is to include "IT occupations that are creative" into the creative industries classification. We fully agree with the view that computational science and the technologies that flow from it are vital to the creative industries. We do not agree, however, that it makes sense to identify a "creative" sub-category of IT in the way proposed.

The consultation paper classifies the computational element of creative industries in three stages:

1. First, in terms of **occupations**: "IT and telecommunications directors", "IT business analysts, architects and systems designers", "Programmers and software development professionals" and "Web design and development professionals"
2. then by **sectors**: "software publishing" (including publishing computer games), "computer programming activities" and "computer consultancy activities"
3. and finally merging these into **broad groups**: "Computer programming activities", "Computer consultancy activities"

We appreciate that the categorisation used is constrained by the current Standard Industrial Classification and Standard Occupational Classification codes. We also understand that it is difficult to provide a single classification of technology around computing because computation (and computational thinking) cuts across all industries, adapting as it engages with industry sectors. Nevertheless, the subset of categories used in SIC and SOC is not a good fit to the computing industry:

- None of the four **occupations** it identifies (at stage 1 above) are "creative" in the DCMS sense. IT and telecommunications directors, for example, are creative in a leadership and management sense but not known for their cultural creativeness. Even Web design and development contains many (we would guess a majority) of

practitioners who are primarily employing their technical rather than (DCMS) creative skills.

- Areas that might be considered creative in the DCMS sense are embedded in subtle ways within broader areas (e.g. a section of the computer graphics community is truly creative in the DCMS sense and some, but not all, computer graphics professionals are programmers).
- The classification into **sectors** (at stage 2 above) also fails to match to reality in industry. Computer programming and computer consultancy are primarily concerned with engineering of systems and in the technical and human aspects of this. This does not mean that creative design elements of the industry are unimportant (they can be essential) but this is in practice a small part of the overall engineering activity.

The reason why the IT industry resists being shoehorned into a creative industries classification is because the IT industry is primarily a technology industry with much greater affinity to engineering and science than to the arts. Wherever it directly touches the creative industries, however, it is a key enabler. To demonstrate this, take each of the of the main ("non-IT") creative groups (from Figure 3 of the consultation):

Advertising and marketing is enabled by new algorithms that make advertising possible in real-time internet systems – for example product placement in the time it takes to make a click on Amazon.
Architecture is enabled by computer aided design systems.
Design and designer fashion is enabled by systems for graphic layout and product visualization.
Film, TV, video, radio and photography is enabled by digital media systems, digital production systems and a wide range of visual and acoustic systems, all processing large amounts of data.
Publishing is enabled by writing, editing and publishing tools adapted to digital media.
Music, performing and visual arts is enabled by digital synthesis systems and new styles of performance made possible by computing infrastructure.

In each of these activities is found a large and important contribution (both with computers used by "creatives" and by tool/system providers serving markets in the creative industries). Unfortunately for DCMS, the computational enablers are difficult to separate from the creative groups (above) because these have grown together. Therefore, identifying IT sub-groups of the main creative groups is not a practical alternative.

The attempt to produce **broad groups** (step 3 above) also fails to produce a practical classification. Computing itself has a strong creative element and it might be argued that anyone constructing a program (or writing a specification of it in some form) is performing a creative act. From a pragmatic point of view, however, some aspects of programming and system specification are more closely aligned than others to "creativity" in the DCMS sense. Fixing bugs in a program compiler feels (intuitively) quite far away from this sort of "creativity" while developing computer

languages/systems for video games feels close to it. Both ends of this spectrum, however, are integral to computer programming. It is impossible to clearly divide programming into distinct "creative" and "non-creative" sections and misleading to provide a catch-all for programming that ignores practical differences within the disciplines of programming and systems design.

Computing (and computational science) is a key enabler for the creative industries but the proposed classification does not (and, we believe, could not) reflect this. We do not believe, fundamentally, that it is practical to classify distinct areas of the IT industry as "creative". To do so would be damaging to IT; would confuse the view of the creative industries; and ignores the strong contributions made to the creative industries by other engineering and scientific disciplines.