Embracing Complexity in Design

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OVERVIEW

THE EMBRACING COMPLEXITY IN DESIGN CLUSTER WAS FORMED UNDER THE PREMISE THAT COMPLEXITY EXISTS ACROSS EVERY ASPECT OF DESIGN AND THAT AN UNDERSTANDING OF COMPLEXITY WILL BE ESSENTIAL FOR THE DESIGN RESEARCH AND PRACTICE IN THE 21ST CENTURY. COMPLEXITY IS INHERENT IN MANY DESIGNED PRODUCTS AND SYSTEMS, AND DESIGNERS NEED TO UNDERSTAND THE OFTEN COMPLEX DYNAMIC PROCESSES INVOLVED IN THE CREATION OF THOSE ARTEFACTS. IN ADDITION, THE SOCIAL AND ECONOMIC ENVIRONMENT OF DESIGN IS BECOMING MORE AND MORE COMPLEX INVOLVING THE INTERACTION OF PEOPLE THROUGH HETEROGENEOUS INFORMATION AND COMMUNICATION NETWORKS. THE MEMBERS OF THE CLUSTER CAME FROM A WIDE SPECTRUM OF DESIGN DISCIPLINES INCLUDING ARCHITECTURE, PLANNING, ENGINEERING, COMPUTING, ORGANISATIONAL SCIENCE, AND ART. THE OBJECTIVES OF THE CLUSTER WERE TO STIMULATE MULTIDISCIPLINARY INTERACTION ACROSS THE DESIGN COMMUNITY ON ISSUES OF COMPLEXITY; BRIDGE THE DESIGN AND COMPLEXITY COMMUNITIES; SHARE COLLECTIVE IDEAS; AND SYNTHESISE THESE INTO A COHERENT ACCOUNT OF THE STATE OF THE ART AND A RESEARCH AGENDA FOR THE FUTURE.

Activities

The cluster members agreed on a set of diverse activities for achieving their objectives: a) tutorials and seminars to support learning and the creation of a common communication language, b) national and international workshops and conferences to share research findings and experience, provide a ground for multidisciplinary exchange, and initiate original publications, and c) artefact creation and exhibitions to showcase the achievements of the cluster, collaborate with artists and design practitioners, and experiment with new ways for disseminating research. All the events were organised and hosted by different sub-groups and individuals on the basis of devolved budgets. The discussions and insights from these events are posted on the cluster website. Some of the themes explored included: understanding and representing multi-level systems in design, managing the complexity of products, processes and projects, embracing complexity in collaborative design, modelling and guiding the design of complex socio-technical systems, engineering emergence, and linking art and complexity science.

Insights

The activities of the cluster reinforced the original premise that complexity is pertinent to design products and processes as well as the environment and context of the design activity. However, the meetings also helped cultivate a sense of community and motivate members to continue developing the "complexity in design" research agenda. A lot of new ideas and research questions also emerged from these meetings. Complexity can offer tools, methodologies and theories for analysing, representing and modelling design processes and products, supporting and augmenting design communications and interactions, as well as supporting innovation and creativity. Also, there is scope for establishing a greater synergy between art, design and science. Art and design can offer new insights to the understanding, modelling and managing of complex socio-technical systems, and make major contributions to the emerging science of complex systems.