

**A MULTI-FUNCTIONAL MODEL FOR SUPPLYING ALL SERVICES
THROUGH ONE UTILITY PRODUCT: UMBILICAL CORDING VISION****Dursun Akaslan***Harran University, Engineering Faculty, ŞANLIURFA/TURKEY***Sezai Taşkın***Celal Bayar University, Engineering Faculty, MANİSA/TURKEY***Abstract**

Today, services used by the public such as electricity, gas or the Internet are delivered to householders via disparate infrastructures. However, the majority of these services require huge capital expenditure and they also bring complexity in terms of their installation, management and maintenance. Besides, as those infrastructures are located in the close proximity from one another, undesired interactions, difficulty in installation, maintenance and management are always seen. To deal with these issues, the Engineering and Physical Sciences Research Council (EPSRC) in the United Kingdom started a project from October 2011 to investigate the following three questions: (i) the possibility of supplying all services through a single utility product; (ii) the scientific and technological gaps on the road that puts a barrier into the single-utility product vision; (iii) time agenda of accomplishing the vision. Currently, a number of novel approaches for the single-utility product have been developed and declared such as *the blood of city*, *the intertubes* and *the solar globe*.

The aim of this study is to reflect on the completed work and present an integrated model for supplying all services through one utility product that capitalises on the advantages of this previously developed work. To accomplish this reflection, first, rationales for the single-utility product vision were discussed, second, the similarities and differences of the current novel approaches were criticised and third, the scientific and technological gaps on the approaches were discovered. As a result of our reflection on the current novels, an integrated model (i.e. umbilical cording) to deliver the public utilities to householders was developed and the technological underpinnings were discussed in detail. For instance, the foetus is considered as the household, whose needs are supplied by placenta through the umbilical cord in the mother's womb. A step-by-step of the umbilical cording vision is envisaged and its principles are demonstrated here from the birth to the death of the human based on the aspects of the life cycle, including (i) womb as the house; (ii) and mother as the transformer.

Keywords: Utility; Energy; All-in-one; Infrastructure; Efficiency

