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NOVEL BUSINESS MODELS IN SUPPORT OF TRENCHLESS CITIES

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ABSTRACT: It has been stated that we are less in need of novel construction technologies than we are of novel business models. This paper argues that this truism is especially relevant to the trenchless technology industry – there is a remarkably comprehensive range of trenchless technologies that could be applied in urban settings to minimise the short-term disruption and long-term damage to society and the streets that serve them. However the fact that they are not routinely and universally used points to major deficiencies in the business models adopted when urban engineering works are proposed. This paper presents a new approach to the development of alternative business models that capture not only the direct and indirect costs of engineering works, but also be broader social and environmental costs. In essence it identifies all of the potential benefits that the engineering works might bring about and balances them against all of the adverse consequences of the works. To do this, a process of system mapping needs to be undertaken such that all of the systems that are influenced by the engineering works are identified, and the points of dependency and interdependency are understood. These are opportunities for value creation or adverse consequences to arise – negative value, if you wish. Once this value framework has been established, it is then possible to change the elements within it by adjusting, iteratively, the engineering designs. By making transparent the full consequences of alternative engineering approaches to solving any particular problem – repair, upgrade or installation of a pipeline for example – it becomes more difficult to justify short-term cost-saving expedience when long-term damage is manifestly an outcome. This therefore supports a move towards proactive asset management, such as the introduction of swarms of miniature robots to assess pipeline condition – new research that will be presented as an example.