DEMONSTRATING THE VALUE OF SMART INFRASTRUCTURE

ABSTRACT Smart infrastructure integrates physical and digital systems to deliver enhanced information for better decision-making. There are many individual examples of good practice use of smart infrastructure however, adoption, whether in new or existing infrastructure, is still not widespread. The value of investing in smart infrastructure is yet to be made to asset owners, operators, funding authorities and politicians with its benefits often discounted as uncertain or unproven.

This paper shares case studies including Clifton Suspension Bridge in Bristol, the Pont de Normandy bridge in France, embankments and cuttings in Network Rail's network, and on the Lower Thames Crossing, which demonstrate the value of smart infrastructure. These were compiled by the Cambridge Centre for Smart Infrastructure (CSIC) Early Career Academics and Professionals Panel (ECAPP) by interviewing asset owners and engineering consultants involved with the assets. This revealed six key value streams: cost savings, improved asset operation and reliability, enhanced safety and disruption response, increased asset longevity, user impacts, and indirect societal benefits. By sharing the sources of value of investing in smart infrastructure, this paper aims to accelerate the adoption of smart infrastructure solutions, encouraging its integration into standard practice.