

Public Abstract

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Title:Dude, where's my internet: an examination of Broadband internet access, infrastructure, and potential for expansion in Missouri

Broadband Internet is increasingly becoming a necessity in today's society. With the recent release of the National Broadband Map and the National Telecommunications and Information Agency (NTIA) supported broadband research projects, more is becoming known about where and to what extent broadband providers are offering their services. Within the state of Missouri, Governor Jay Nixon has set a goal of making broadband available to over 95% of the state. Broadband providers do not typically release their service areas, or footprints, to the public in any detail, making it difficult to assess which areas receive service and which do not. Moreover, assessing proximity of unserved areas to the middle mile, the infrastructure linking each Internet provider to the backbone, is even more difficult due to lack of publicly available information about this infrastructure. To address these issues, this thesis examines methodologies for evaluating access to broadband service and inferring the location of supporting infrastructure. To do this, a range of different representations of the geographic extent to which broadband providers provide access are evaluated. A methodology is proposed for using what is known about the geographies of provider service areas--and the spatial relationship among each other--to infer where middle mile infrastructure might likely be located within a region of interest. The developed middle-mile is then used to assess access to broadband in the state of Missouri and to evaluate the potential effort required to extend service to areas without access.