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## The KRDS Benefit Analysis Toolkit: Development and Application

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### Abstract

This paper provides an overview of the KRDS Benefit Analysis Toolkit. The Toolkit has been developed to assist curation activities by assessing the benefits associated with the long-term preservation of research data. It builds on the outputs of the Keeping Research Data Safe (KRDS) research projects and consists of two tools: the KRDS Benefits Framework, and the Value-chain and Benefits Impact tool. Each tool consists of a more detailed guide and worksheet(s). Both tools have drawn on partner case studies and previous work on benefits and impact for digital curation and preservation. This experience has provided a series of common examples of generic benefits that are employed in both tools for users to modify or add to as required.



The KRDS Benefit Analysis Toolkit<sup>1</sup> was developed to assist curation activities by assessing the benefits associated with the long-term preservation of research data. Organisations in the Higher Education sector are facing increasing demands to demonstrate their effectiveness and significant return-on-investment of public funds. This is often expressed in terms of innovation and impact on the economy and society, but extends to specific investments in digital curation and preservation of research data. Enhancing the ability to demonstrate benefits, value and impact in this context is paramount, and the Benefit Analysis Toolkit is designed to support that requirement.

The Benefit Analysis Toolkit builds on the Keeping Research Data Safe 2 (KRDS2) report (Beagrie, Lavoie & Woollard, 2010), which introduced a general Benefits Framework to aid the high-level characterization of the benefits from preserving valuable research data. Development of the Toolkit has been funded by JISC as part of the KRDS/I2S2 Digital Preservation Benefit Analysis Tools Project. The project has tested, reviewed and developed further the KRDS2 Benefits Framework and the KRDS/I2S2 Value Chain and Benefit Impact Analysis tools for assessing the benefits of digital curation/preservation of research data. It has also extended their utility and wider adoption by providing detailed user guidance, worked examples for the tools and creating an integrated Toolkit.

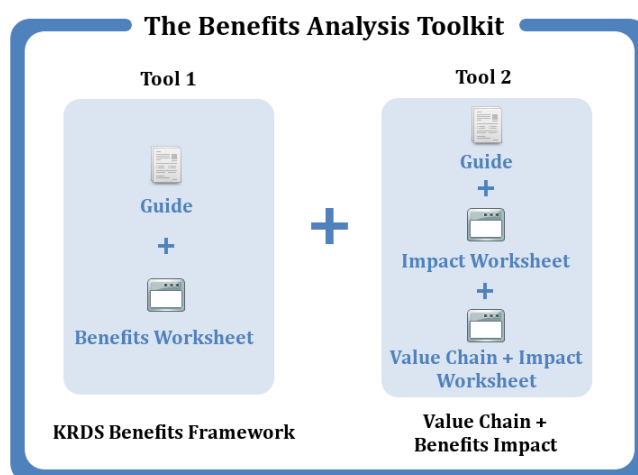


Figure 1. The KRDS Benefits Toolkit. © Charles Beagrie and project partners 2011

The Toolkit consists of two tools: the KRDS Benefits Framework, and the Value-chain and Benefits Impact tool. Each tool consists of a more detailed guide and worksheet(s). Both tools have drawn on partner case studies and previous work on benefits and impact for digital curation/preservation. This experience has provided a series of common examples of generic benefits that are employed in both tools for users to modify or add to as required.

<sup>1</sup> KRDS/I2S2 Digital Preservation Benefit Analysis Tools Project website: <http://beagrie.com/krds-i2s2.php>

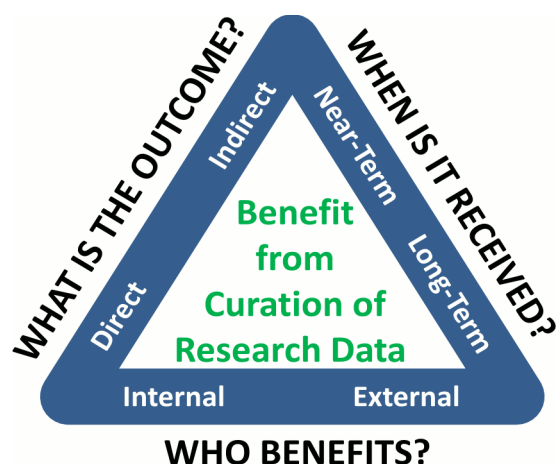


Figure 2. The KRDS Benefits Framework. © Charles Beagrie and project partners 2011.

The KRDS Benefits Framework is a tool for identifying, assessing and communicating the benefits from investing resources in the curation/long-term preservation of research data. The Framework employs a simply structured, easily understood format, and is intended to aid internal discussions amongst project staff, as well as to support discussions between project staff and external stakeholders, such as university administrators or funding organisations. The Framework can assist in prioritizing alternative curation investments and justifying data curation costs within funding applications. The Benefits Framework organises potential benefits from the curation/preservation of research data along three broad dimensions: the outcome achieved; when the outcome is achieved; and who benefits from the outcome. Assessing a data curation activity's benefits, as well as communicating these benefits to stakeholders, requires a clear understanding of the fundamental elements of the activity's value proposition. In short, the "what", "when" and "who" of the value proposition must be identified and described.

The second component of the Toolkit is the Value Chain and Benefits Impact Tool. Once benefits are identified and organised within the Benefits Framework, further work can proceed aimed at identifying potential measures or illustrations of the value and impact of those benefits. This next stage is supported by the Value-Chain and Benefits Impact Tool. This can be used in assessing where value is added to outputs in a chain of activities, and for use in evaluation, strategic and organisational planning, and reporting. The Tool helps identify quantitative metrics and qualitative indicators for the impact of benefits and optionally supports a value-chain analysis. It uses the KRDS Activity Model (part of the KRDS Cost Framework; see Beagrie, Chruszcz & Lavoie, 2008) as a starting point for the value-chain analysis, so it is ideal for the specific needs of research data and its curation/preservation. A detailed user guide and two worksheets have been provided with the Tool; the Benefits Impact worksheet and the Value-chain and Benefits Impact worksheet. Both worksheets have been pre-populated with a selection of common generic benefits also used in the Benefits Framework Tool; these can be reviewed, deleted or enhanced as needed. The tool has been designed to be generic but easily configurable by the user for their specific needs or application.

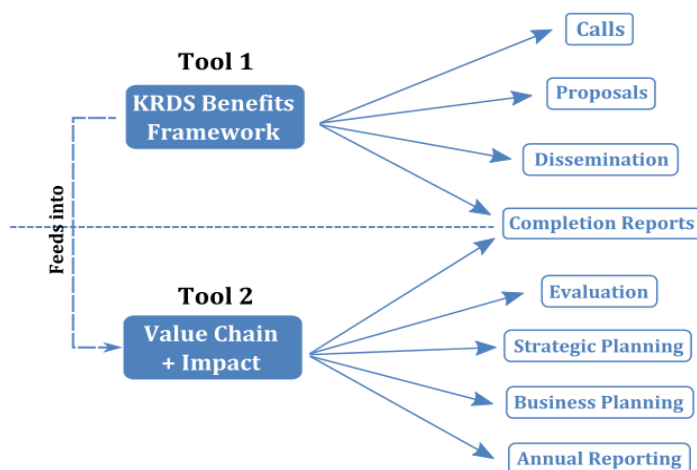


Figure 3. Potential uses for the Toolkit and its component tools. © Charles Beagrie and project partners 2011.

The KRDS Benefit Analysis Toolkit was reviewed and tested through a partnership with a number of institutions, including the Centre for Health Informatics and Multi-Professional Education (CHIME), the UK Data Archive, and the Archaeology Data Service, and the SageCite Project. In addition, a dissemination workshop was held on July 12, 2011 in London, where a variety of participants offered commentary on the Toolkit and its uses. (Charles Beagrie Limited, [2011](#))

Prudent investment of resources in data curation activities requires a thorough analysis of both costs and benefits. The KRDS Cost Framework supplies the tools to address the former; the KRDS Benefit Analysis Toolkit fills a longstanding gap in terms of the availability of tools to address the latter. Taken together, the KRDS suite of tools allows practitioners to conduct cost/benefit analysis of their data curation activities, and to use the results of this analysis to inform internal decision-making, as well as communicate value and impact to external stakeholders such as funding organizations.

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