Academic Publishing and Knowledge Transfer

This diagram represents a typical understanding of knowledge transfer in the academic environment:

The Knowledge Transfer Cycle

http://datalib.library.ualberta.ca/~humphrey/lifecycle-science060308.doc
Digital Curation 101

However, in the e-Science environment, this representation of the knowledge transfer cycle is no longer adequate:

In the future, a researcher will read an article multi-dimensionally. Not only will there be text, with hyperlinks to related literature or citations within the article, there will be links to the data reported within the article, through graphs, tables, illustrations, that will link to related datasets. These datasets will be organized and retrieved based upon accepted, documented and well understood taxonomies and ontologies within the discipline, crosswalks will link, automatically, between one taxonomy and another to lead a researcher from one field of enquiry to another, thereby making connections from the findings and results in one field to another ².

Scholarly publishing is changing: for instance, preprint databases are now commonplace in many scientific fields, and publishing on the web is increasingly common. In addition, data archives are emerging as a significant form of scholarly communication in some fields. Some examples of data archives are:

- the Natural Environment Research Council, UK (NERC) NERC DataGrid³
- NASA’s Life Sciences Data Archive⁴
- The Hubble Space Telescope HST Science Data Archive⁵
- The Canadian Astronomy Data Centre’s Gemini Science Archive⁶.

Considerable rethinking about how to respond to these changes is taking place on the part of the traditional participants in the academic publishing and knowledge transfer processes.

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² ARL/NSF Workshop on Long-Term Stewardship of Digital Data Collections ‘To Stand the Test of Time’, 2006 p.141
³ http://www.arl.org/pp/access/nsfworkshop.shtml
⁴ http://ndg.badc.rl.ac.uk/
⁵ http://lsda.jsc.nasa.gov/
⁶ http://archive.eso.org/archive/hst/HST-archive.html
⁷ http://www1.cadc-ccda.hia-iha.nrc-cnrc.gc.ca/gsa/