Co-Authorship Network for Scientific and Technical Papers published by at least one WIT Author
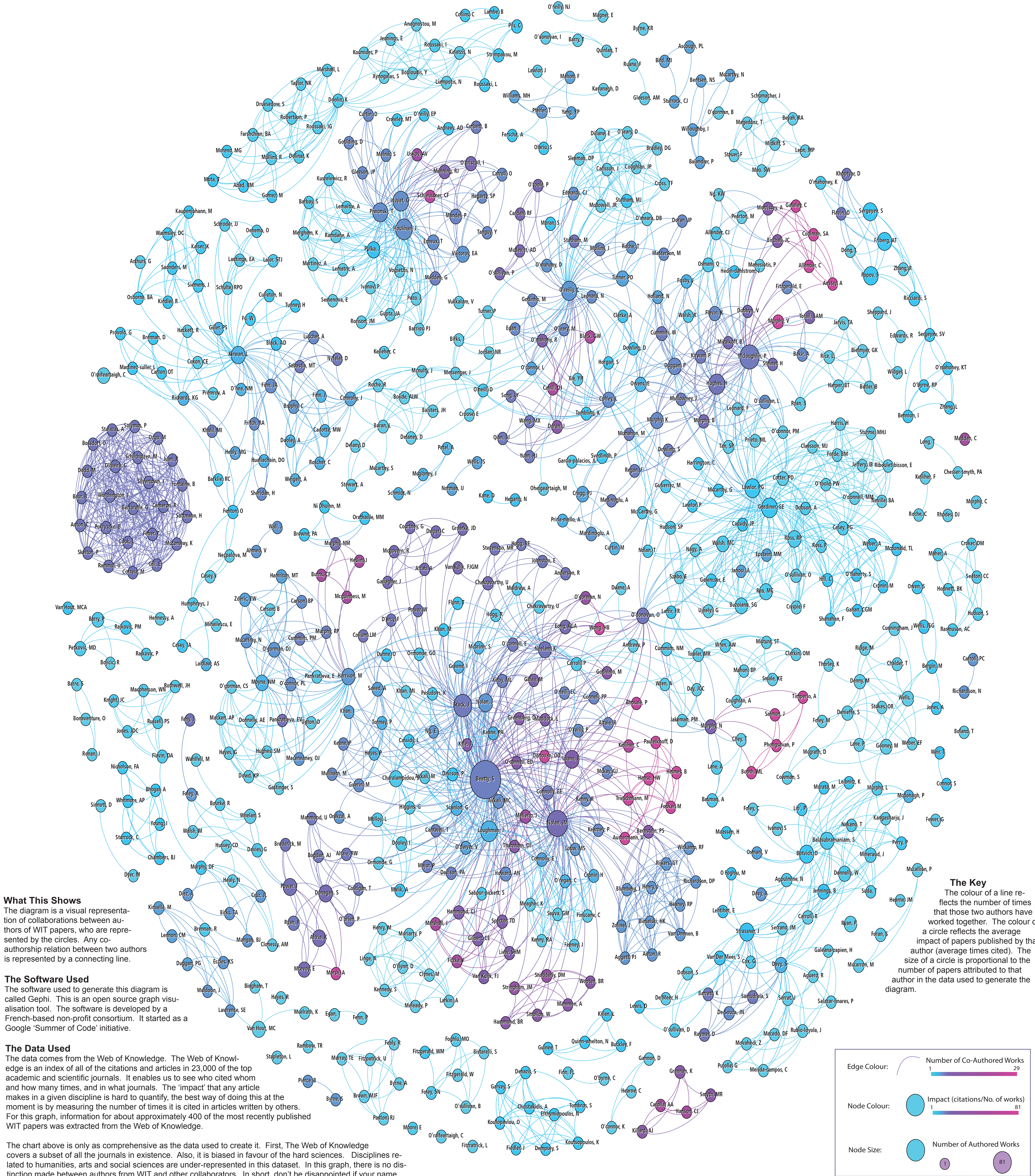
David Kane, WIT Libraries

What This Shows
The diagram is a visual representation of collaborations between authors of WIT papers, who are represented by the circles. Any co-authorship relation between two authors is represented by a connecting line.

The Software Used
The software used to generate this diagram is called Gephi. This is an open source graph visualisation tool. The software is developed by a French-based non-profit consortium. It started as a Google 'Summer of Code' initiative.

The Data Used
The data comes from the Web of Knowledge. The Web of Knowledge is an index of all of the citations and articles in 23,000 of the top academic and scientific journals. It enables us to see who cited whom and how many times, and in what journals. The 'impact' that any article makes in a given discipline is hard to quantify, the best way of doing this at the moment is by measuring the number of times it is cited in articles written by others. For this graph, information for about approximately 400 of the most recently published WIT papers was extracted from the Web of Knowledge.

The chart above is only as comprehensive as the data used to create it. First, The Web of Knowledge covers a subset of all the journals in existence. Also, it is biased in favour of the hard sciences. Disciplines related to humanities, arts and social sciences are under-represented in this dataset. In this graph, there is no distinction made between authors from WIT and other collaborators. In short, don't be disappointed if your name does not appear here, it's not you, it's the data.
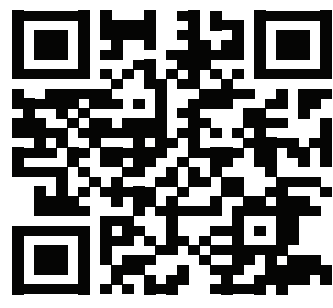
The Benefits
In spite of these shortcomings, the Web of Knowledge is a valuable tool for research assessment across the education sector, as it provides a very consistent benchmark. Analysis of networks using graph theory is a discipline that has come into its own of late, as improvements in technology have made possible the development of new tools, namely graph databases and visualisation software such as Gephi.

In the context of research and bibliometric analysis this approach is only just beginning to be explored. It is likely that it will prove to be increasingly used for strategic planning, capacity building and identifying collaborative opportunities among different research organisations.
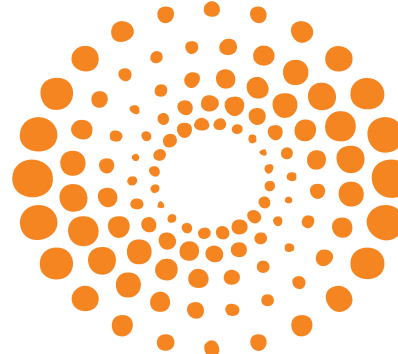
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The Key
The colour of a line reflects the number of times that those two authors have worked together. The colour of a circle reflects the average impact of papers published by that author (average times cited). The size of a circle is proportional to the number of papers attributed to that author in the data used to generate the diagram.

Edge Colour:	1	Number of Co-Authored Works	29
Node Colour:	1	Impact (citations/No. of works)	81
Node Size:	1	Number of Authored Works	81

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Gephi