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THE TRIPLE  
HELIX MODEL

DISCUSSION PAPER

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**SCARAB**

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## The Triple Helix Model

The concept of the triple helix of industry, academia and government relations was established in the 1990's by Etzkowitz (1993) and Etzkowitz and Leydesdorff (1995). It conveys the change from industry-government relations dominating the Industrial Society to a growing relationship between university-industry-government in the Knowledge Society (Ranga and Etzkowitz, 2013). In the Knowledge Society, how information and scientific knowledge is created, shared and utilized is of the utmost importance (Dinu, 2008). Previously, the university was viewed as supporting innovation by providing trained personnel, the results of research and knowledge (Etzkowitz, 2003). In transitioning to a Knowledge Society, however, the university has played an increasingly significant role, acting alongside industry and government (Etzkowitz, 2008) and becoming a source of innovation (Etzkowitz, 2003).

Ranga and Etzkowitz (2013) describe three reasons why this enhanced role of the university came about. The first is because of the addition of what is referred to as the university 'third mission' – i.e., involvement in socio-economic development – alongside the traditional academic missions of teaching and research (Ranga and Etzkowitz, 2013). The second reason regards the university's capacity to provide students with new ideas, abilities and talent being viewed as an asset (Ranga and Etzkowitz, 2013). The third reason involves universities' ability to produce technology, thus altering the perception of them simply as a source of knowledge to a new source of technology generation (Ranga and Etzkowitz, 2013).

The triple helix not only conveys a transformation in the relationship between university, industry and government, but also within the individual sectors whereby each increasingly "takes the role of the other" (Etzkowitz, 2003, p. 309). This intersection of the spheres fosters innovation, better enabling the triple helix to address complex social problems, which as discussed by Hardy et al., (2006), is what many cross-sectoral collaborations are intended to do.

There is a large body of literature that discusses industry, government and academic collaboration – in relation to social issues – without necessarily referencing the triple helix. For example, Kemp (2017) describes the activities of a non-profit that was created through industry, academic and government collaboration to improve disaster recovery efforts. Other examples of literatures mentioning collaboration between the three sectors – either all three directly or between two and one (e.g. government) indirectly – with respect to social problems are: food security (Rampisela, Sjahril, Lias and Mulyadi, 2018; Luh, Jiang and Chien, 2014), healthcare (Li, Fitzgerald, Morys-Carter, Davie and Barker, 2018; Azuma and Kodama, 2018), water safety and security (Heringa, Horlings, van der Zouwen, van den Besselaar and van Vierssen, 2014), poverty reduction (Almeida, Mello and Etzkowitz, 2012), and climate change (Hao, Dong and Lianlian, 2015).

Although beyond the scope of this conference, it is worth noting recent work promoting the extension of the triple helix to a quadruple/quintuple helix innovation system by adding civil society, end users of innovation and the environment to the original triad (Carayannis, Grigoroudis, Campbell, Meissner and Stamati, 2018; Cunningham, Menter and O’Kane, 2018; Höglund and Linton, 2018; Kriz, Bankins and Molloy, 2018; McAdam and Debackere, 2018; Miller, McAdam and McAdam, 2018), however, the fourth/fifth helices necessitate taking a more micro perspective such that the unit of analysis becomes individual actors as opposed to an organizational level of analysis.



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