

The Future, Entrepreneurship, and Innovation:

A note on the importance of the getting entrepreneurship and innovation right for a sustainable future

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Entrepreneurship and innovation is often seen as a silver bullet for governments and politicians to solve economic crises and downturns (Linton 2016), and solve poverty (Sutter et al. 2019). One can view entrepreneurship as something important to for the economy and for financial wealth, but it is also possible to see entrepreneurship as something more, the engine of technological development which has impacted most countries and industries leading to improved standard of living, both thru the technology impact and thru creating new jobs (Birch 1979). This belief in entrepreneurship and innovation as the solution to so many problems has focused the attention of many politicians, governments and other world leaders.

The government has created triple helix (Etzkowitz and Leydesdorff 1995) and quadruple helix (Höglund and Linton 2018) models of innovation where entrepreneurship and innovation become central aspects for academia, government, and industry. In this short note we will take a closer look at the three helices and how research has focused on the different parts.

First, much research has been conducted on the industry aspect of triple helix with research interest in understanding how firms can become more entrepreneurial and also competitive (e.g. Linton and Kask 2017; D. Miller 2011; Wales 2015) and also focusing on how new firms, often labeled startups, go thru the commercialization process (Hasche et al. 2017; Hasche and Linton 2018; Kask and Linton 2013).

Second, we can conclude that future research might want to look deeper into how governments can act as an arena where entrepreneurship can flourish and

grow. One way this has recently been done is thru the development of the European Union's regional policy of smart specialization (McCann and Ortega-Argilés 2016). This has brought focus on startups and SMEs to the EU agenda, leading future research to explore more on how EU policy can enhance the environment for entrepreneurship and innovation, see for example the special call for research about this in the journal of Small Business and Entrepreneurship (2018).

The Innovation System (IS) can be conceptualized in different ways. The traditional approach of Lundvall (1992) and Nelson (1993) focus mostly on the components of the IS, that is, the organizations and institutions from a more linear view. Institutions are the rules and regulations while the organizations are the actors. More recent research has turned focus more upon the actions within the IS (Edquist 2011). We see an innovation system in wide terms that includes important economic, social, organizational, political, institutional and other factors that can affect the development, diffusion, and use of innovations (Edquist and Hommen 2008).

Dynamic interactions, the activities and potential synergies have recently been stressed as important features in a RIS (Edquist 2011). Specifically, Ledesdorff (2012) highlights that an important aspect is to find out under what circumstances expanded interactions can be anticipated to contribute to increased synergies. With these calls of additional features of the RIS from a triple helix perspective, the need to go beyond Triple Helix to an approach of additional features called Quadruple Helix or an N-Tuple (Lew et al. 2016; Leydesdorff 2012; R. McAdam et al. 2012). The fourth dimension is often described as the end user, customer or community (Carayannis and Campbell 2009; K. Miller et al. 2016). To advance our understanding of the dynamics and growth of a RIS and its Smart Specialization program it is worth to further investigate Smart Specializations as Höglund and Linton (Höglund and Linton 2018) has done.

As research on IS has expanded the need for regionalization has been identified. In the early 1990s regionalization was taking place in many countries in terms of technological, economic and political levels (Ranga and Etzkowitz 2013). Research on IS has therefore also focused on specific RIS as well (e.g. Cooke et al. 1997; M. McAdam et al. 2016). The innovation systems different activity dimensions have been described above. These will be applied to the RIS. Another important distinction of a RIS is that of Triple and Quadruple Helix that will be further elaborated below.

Triple Helix scholars contend that (1) government, (2) universities, and (3) firms have important roles within the RIS (Etzkowitz and Leydesdorff 2000; Lundberg 2013). In the triple helix literature some authors focus and highlight the importance of the mutual cooperation among the three actors (Leydesdorff 2012; R. McAdam et al. 2012) and the significance of the knowledge-based society for RIS development (Etzkowitz and Klofsten 2005). As the triple helix literature has developed and focused more on regional development and also the trend of Smart Specialization an additional key stakeholder in terms of the end user, customer, and community (Carayannis and Campbell 2009; R. McAdam et al. 2012). Colapinto and Porlezza (2012) highlight that a core part of the fourth helix is related to the network, knowledge transfer, and human capital within the innovation system.

Third, academia's role in entrepreneurship and has become more intensified as entrepreneurship has become a legitimized research field (Venkataraman et al. 2012). In terms of education it is also important to educate students to become entrepreneurial. It is my belief that it is not necessarily that students develop top notch solutions (even though I have seen great solutions and ventures created by students that I never could have imagined myself). Rather, I believe that it is more important that students develop an entrepreneurial mindset and especially focusing on problem solving and creativity (Armstrong 2016). This includes not only creating business ventures but also creating social ventures. I argue that higher education at large probably gains from an approach, giving the students tools to problem solving at different levels and different sectors of society and business (Linton and Klinton in press).

Finally, the future of entrepreneurship is looking bright. However, we cannot take for granted that entrepreneurship and innovation is something inherently good with only positive results (Linton 2014, 2016). The focus on entrepreneurship as something inherently good can lead to effects that we might not want.

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