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## ***Impact of the New Production of Knowledge on Modern Universities<sup>2</sup>***

### **Extended summary**

Contemporary universities, conditioned primarily by the process of globalization, are increasingly being confronted with numerous internal and external challenges which are presented analytically and critically in this paper. If we observe the historical development of universities, the most prominent characteristic of the first medieval universities was the transfer of the existing knowledge. In the 19th century, Humboldt University was known for its integration of teaching and research. The importance of Humboldt University is emphasized by Arbo & Benneworth (2007), who state that this university was an autonomous body, a place where knowledge was sought for itself, and where lecturers and professors had stability, an identity embedded in a particular discipline and tradition. The university favoured the long-term goals over the short-term ones; theoretical knowledge over practical knowledge; disinterestedness over usefulness. If academic efforts led to practical improvements, these were largely unintended results. The issue of application was left to the subsequent initiatives of others. According to the Humboldt model, academic life should be conducted in isolation from social and economic interests. At modern universities, it is increasingly being emphasized that the Humboldt model is unsustainable for many reasons. Wissema (2009) points out that the former Second Generation Universities (2GU), i.e., the Humboldt University, have been adapting to add a new faculty for some new research area. The aim of this paper is to present a new production of knowledge

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within the new university paradigm. In this context Wissema (2009) cites the following reasons why Humboldt University is no longer sustainable: (a) as the first force he cites the need to obtain alternative funding within the university, so that top researches can be realised. In this way the separation of academic institutions is slowly disappearing, universities not only integrate with each other, but also integrate with the world of industrial markets; (b) globalization, which no longer stops academics at the door of a university, drives the global and international markets to actively compete for students, teachers and corporate contracts. Unlike the second-generation universities that have been able to cater for scientific research and results without addressing their applications, the third-generation universities must actively pursue the goal of exploiting or commercializing the knowledge they create, and that task becomes just as important as teaching and research; (c) universities as the most important instruments of economic growth; (d) interdisciplinarity - unlike Humboldt's monodisciplinarity, most scholars in today's research projects work in teams for which faculties are often a barrier; (e) an increase in the number of students who transform the universities into bureaucratic organizations and universities seek new forms of association to enable an effective management (to be realized); (f) increasing the efficiency of performing scientific tasks due to an increased number of students. In this context, the importance of studying distinct models of knowledge production is growing. Gibbons et al. (1994) argue that universities are, to some extent, the victims of their own success: people are now highly educated and more mobile than before; science has become "demystified"; information and communication technologies are expanding rapidly; non-university knowledge production centers are multiplying; and the value of creative and tacit knowledge increases. Consequently, universities have lost their "monopoly of knowledge" and must adapt to the context of the socially distributed knowledge and networked innovation, where users play an increasingly important role in innovation processes and where social acceptance is vital to success. As Arbo and Beneworth (2007) point out, this implies a shift from the production of the Mode 1 knowledge, which is regulated by academia and its review mechanisms, to the production of the Mode 2 knowledge, implemented in the context of application. While the Mode 1 is considered disciplinary, homogeneous, hierarchical and stable, the Mode 2 is considered transdisciplinary, heterogeneous, heteroarchival and transient. In the Mode 2, utility, sustainability and social acceptability are the central criteria of quality assessment. Under Mode 1, academic communities "spoke" to society. Under Mode 2, society "speaks back" to the academic community. Therefore, the traditional academic model of disciplinary research is under challenge due to internal reasons. Science has become "contextualized". The relationship between teaching, learning and work is blended in new ways, hybridization is taking place between the forms of knowledge and the forms of organizations, and the previously separate areas of society are increasingly becoming intertwined. For the Mode 3 concept, Jesić (2013) emphasizes that this model is more inclined to emphasize the coexistence and co-evolution of different modes - the modes of knowledge and innovation. As a conclusion of the paper, we point out that universities are facing numerous challenges and changes, and the applied knowledge which is put into the society's progress is gaining in importance. In the process, it is imperative that the market should serve society, not the other way around. Otherwise, universities will lose their autonomy and will become solely service institutions, instead of critics of society.

**Keywords:** university, academic revolution, triple helix, quadruple helix.

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