

## In a Nutshell: Innovation in Baden-Württemberg

*Andreas Koch, Tübingen*

*Contribution to the "International Seminar on Knowledge and Innovation"  
Barcelona, October 1st, 2013*

Located in the southwest of the country, Baden-Württemberg is one of the largest German Federal States regarding area and population. Its **population** is still growing (mainly due to immigration) and the state has 11 million inhabitants now. The people living in the region are characterized by high qualification levels and the labor market participation is above the average. Generally, the inhabitants of Baden-Württemberg are very satisfied with their personal and economic situation. The technological and economic strength of the region is a current asset, but it also is a challenge with regard to keeping at the top in the future. Another major challenge is the demographic change. It induces, inter alia, decreasing numbers of qualified workers and of graduates on the one hand and an increasing number of elderly people which are in need of care. Therefore, both the public bodies and private firms and initiatives are developing ideas and strategies for coping with these challenges.

One area with high potentials is the (regional) **innovation system**. Regarding innovative capabilities and innovation itself, Baden-Württemberg has a top position not only within Germany but also at the international level. In a recent benchmarking by the state's Statistical Office, it ranges at the top of nearly 80 European regions, which is mainly due to the strong technological basis. More precisely, Baden-Württemberg disposes of extraordinarily high investments in Research and Development (4.8 % of the GDP or 16.4 billion EUR in 2011 – Germany: 2.8 %). It reaches also top positions with regard to R&D personnel and to employment in high-technology sectors. Inventors from Baden-Württemberg register five times as much patents per capita as the European average. Although not affecting the overall top position of the region, it has to be stressed that Baden-Württemberg achieves only an average position with regard to the dynamics of these indicators. This can be a threat with regard to the future development.

Besides the already mentioned capable and motivated people constituting the basis for the region's success, I see three main drivers for this strength of the regional innovation system which I will briefly outline in the following:

First, Baden-Württemberg disposes of an extraordinarily strong **industrial basis** which is made up of a both diversified and specialized population of firms. At the core of that strength we find manufacturing firms in the automotive and in the mechanical engineering sector – both large global players and highly specialized "hidden champions". Myriads of small and medium sized firms both in manufacturing and services, many of them suppliers

for other regional companies, constitute another crucial element of the regional economy. Baden-Württemberg's economy is highly international in the sense that many firms are exporters or even have foreign subsidiaries all over the world. Although this is a major advantage in many respects, e.g. with regard to knowledge flows, it is also a huge risk firms as the economy is strongly affected by international shocks. This fact can be observed, for instance, in the fact that Baden-Württemberg has been hit more severely by the recent economic crisis; its growth rates after the crisis, however, have exceeded the growth of many benchmark regions.

Second, Baden-Württemberg has an **educational system** (particularly in professional and higher education) that is characterized by a diversified structure and a high level of cooperative education, i.e. linking theory and practice, academic studies and work experience. This is valid at the level of vocational education and it is also in practice at the level of tertiary education. In the so called "Cooperative State University" (*Duale Hochschule*), students gain their Bachelor's degree on the basis of three years of education including in equal shares of university education and collaboration in a private firm. Baden-Württemberg has strong universities – four of the seven universities of the region have been successful within the highly competitive *Excellence Initiative* of the Federal Ministry for Education and Research.

Last but not least, **cooperation and networks** form a pivotal pillar of the regional system of innovation. Baden-Württemberg disposes of a diversified landscape of organizations with a wide range of private, public as well as composite backgrounds. Most of these institutions have either a regional or a topical/technological focus, many perceive themselves as *clusters*. A general idea behind most of these organizations is to base their activities on existing regional (technological) core areas and to use and further develop available competencies with the aim of generating new knowledge. Recent examples for such activities are the Federal State's Agencies for Electric Mobility ([www.e-mobilbw.de](http://www.e-mobilbw.de)) and for Lightweight Construction ([www.leichtbau-bw.de](http://www.leichtbau-bw.de)) or the privately organized network for mechatronics ([www.mechatronik-ev.de](http://www.mechatronik-ev.de)).

Frequent critiques raised with regard to the cooperation networks and the supporting institutions within Baden-Württemberg have been that the variety and redundancy of the existing initiatives and organizations can be confusing and that more general competence centers are needed ("one-stop-shop"). Another challenge for the regional actors is to keep a balance between focusing on regional assets and simultaneously developing and retaining an openness and absorptive capacity with regard to external knowledge and competencies.