

Adaptation qualifications in engineering in the federal republic the

[Business](#), [Entrepreneurship](#)



Adaptation of the DQP-regime in Stuttgart since World War II The production range of German machine tools has decreased dramatically since World War II. This means that individual parts now carry a much higher value added. Therefore cooperation was more necessary in earlier days, when a well equipped supply network of many different firms was needed to produce a machine tool: In the 1970s a machine was probably composed of 500-800 parts. Today a machine of that kind could be made out of 100-150 parts. It has a much higher productivity, a higher capacity and its parts are of higher value, but also they are just buy-in parts (Interview BW-F-01). Vertical buyer-supplier relations became even more important because of this development, but such intensified vertical relations only made sense where a few important business partners were able to produce high value-added machinery parts. Consequently, firms cooperating vertically pushed each other into high price, high quality market niches, thereby fostering the DQP path for the local industry. On a macro-economic level, Streeck (1991) has shown the connections among such a development in the production regime with a high-wage economy (Vitols 1996), the underlying social understanding of Beruf (Streeck 1996), and an advanced welfare state.

Stuttgart's governance structure fitted well into this national institutional environment, because its local economy was oriented towards high quality standards, which had been achieved by regional support for qualifications in engineering. In the Federal Republic the development of technological change in machine tool engineering has been supported by public actors such as the Federal Ministry for Research and Technology (BMFT), industrial associations like the VDMA and the unions - which in the

1970s and 1980s were concerned with social issues raised by technology. Political parties battled over the appropriate public policy instruments to support innovation.

Two major approaches had evolved as opposing strategies to shape the machine tool sector as well as other innovative capital goods industries. The conservative parties proposed an *Ordnungspolitik*, whereby the state would just to set the framework for private entrepreneurship. The Social Democrats, then in government, contested this with what they termed *Strukturpolitik* (Ziegler 1997). *Strukturpolitik* involved government, advised by experts, anticipating major challenges to industrial sectors and safeguarding their technical development. In 1974 a Commission on Economic and Social Change recommended initiating