Since the early 1990's the Danish construction industry has been exposed to organised activities aiming to develop the industry from a sectorial point of view. It has however been difficult for these activities to establish a coherent and attractive sectorial development agenda which has been able to generate detectable and widespread effects in the industry as a whole. The objective of this thesis is to develop a vocabulary which is able to penetrate and explain the experiences of these contemporary sector development processes in the Danish construction industry as they have unfolded since the early 1990's. The purpose of this vocabulary is to make sense of these experiences in order to provide actors involved in these processes with a possible response as to how they may be managed or governed. The thesis is organised into three blocks. The first block develops a theoretical understanding of how a sector may be recognised as a strategic object of development by strategically motivated actors and it further discusses how this understanding may inform empirical research. The second block analyses the contemporary sector development activities in the Danish construction industry. The third block identifies the present-day conditions under which these development efforts operate and outlines a possible response as to how such processes may be managed and supported. In order to develop an understanding of how strategically motivated actors may recognise a sector as a strategic object of development, the first block sets out by introducing the concepts of systems, regimes and fields. These concepts are introduced as they offer different vocabularies which may be used to understand how sectors condition industrial development. More importantly, these vocabularies however also offer different ideas of the tensions and contractions which sectors generate and different ideas of how such tensions and contradictions are experienced. The discussion of these concepts accordingly allows strategic sector development activities to be introduced as processes by which actors deal with the experiences of contradictions and tensions. It is then argued that actor-network theory can help to turn this analytical perspective into an empirical research strategy as the actor network approach allows strategic sector development activities to be addressed as attempts to build so-called macro-actors. In conclusion, it is argued that sector development activities may be empirically identified as configurations of theorization, concretization and institutionalization processes. Theorization signifies the process of constructing a sectorial representation which is able to make sense of a complex set of otherwise conflicting and incompatible experiences by perceiving them as symptoms of a sectorial malfunction in a way which defines new strategic opportunities or necessities. Concretization signifies processes by which the strategic orientation of the theorized sector representation is turned into experimental activities. Finally, institutionalization signifies strategies which aim to diffuse and anchor the strategic orientation across a wider social space. Based on these concepts, the empirical analysis finds that the Danish construction industry was established as a contemporary sectorial object of development in the early 1990's. It is then demonstrated that the attempts of the early theorization activities in defining the industry as a sectorial object of development were unable to directly inform experimental concretization activities in any coordinated way. The early theorization activities however portrayed the industry as a series of challenges such as 'low productivity', 'low level of innovation', 'organizational fragmentation', and 'poor collaboration'. It further indicated that these challenges were interconnected in some sectorial way. The early sector development activities thus theorized the sector as an object of development by establishing a differentiation between a series of 'symptoms' which indicated some kind of sectorial 'root cause'. The contemporary sector development activities may thus be seen as attempts to diagnose a series of theorised industrial symptoms the effects of some underlying sectorial 'root cause'. In the period from the early 1990's and until 2001 it however proved very difficult to make productive use of the sectorial differentiation between the symptoms and the root cause. From a sectorial point of view, the various experimental concretization activities in the period thus tended to target the symptoms in an uncoordinated way. No coherent and durable configurations of theorization, concretization and institutionalization processes were thus established. After 2001 two more coherent strategic configuration however emerged which made productive use of the differentiation between the symptoms and the underlying root cause. One of these configurations was represented by a sector development initiative called Digital Construction (DC) and the other was represented by a sector development initiative called Building Lab DK. These two initiatives however diagnosed the theorized symptoms as effects of very different sectorial root causes. DC argued that the symptoms were caused by a project-oriented construction process organised by a series of uncoordinated and inconsistent information flows and suggested that a digital information infrastructure based on 3d object-oriented building models needed to be developed and implemented in the industry. Building Lab on the other hand diagnosed the symptoms as the effects of an under modularized production environment characterized by project-specific problem solving and short-term collaboration that hindered organization specialization and innovation. This initiative thus suggested that an industrial transition based configurable system deliverances developed and produced independent of the individual construction project needed to be initiated. The image of rational behaviour which informed DC thus suggested that the organization of the project-oriented construction process needed to be optimized and coordinated by means of a comprehensive and shared digital information infrastructure whereas the image of rational behaviour which informed Building Lab DK suggested that the project-oriented organization of the industry needed to transcend rather than optimised in order to facilitate organizational differentiation and company specific learning and capability building based on project independent production and development processes. The two sector development strategies did however not only differ in concern to the sector representation which informed them. Also their concretization and institutionalization strategies were very different. A priority of DC was to calibrate its strategic orientation with the organised interests in the industry and furthermore to engage as many industrial partners as possible in the concretization activities in order to ensure ownership to the initiative in the industry. The consequence was that the concretization activities were not sufficiently coordinated. As the digital information infrastructure had to be implemented through mandatory public procurement policies it accordingly turned out not to be operational. While the initiative thus failed to develop and institutionalise an operational digital information infrastructure in the industry it however succeeded to build organizational capacity on the area coordinated ICT use in the industry. Digitalization thus remains a dominant
logic on the sectorial development agenda. While the strategy of DC was to engage with the organised industrial interests, Building Lab DK perceived these interests as a barrier to an industrial reorganization based on configurable system deliverances. The strategy of this initiative accordingly was to target the companies of the industry through local and direct development activities. Building lab DK succeeded to establish and influence a series of innovation consortia by means of their strategic orientation. The initiative was however characterised by the belief that 'sun-shine stories' would be able to catalyse a broader development towards modular system deliverances in the industry. The consequence of this belief was that the initiative did not engage in activities which aimed to anchor its strategic orientation through organised community building or political agenda setting. Modularization as a sectorial development strategy thus largely disintegrated with the close down of building lab dk. The analysis in conclusion demonstrates a sector development agenda are only under very special circumstances likely to be dominated by a single dominant configuration of theorization, concretization and institutionalization processes. It is further argued that under alternative circumstances where no dominant strategic orientations can be established a key governance objective is to actively cope with the co-existence of multiple strategic orientations by recognizing and organizing the incompatibilities between these different strategic orientations. It is then demonstrated that the actual attempts at organising the contemporary sector development agenda in the Danish construction industry have been weak in recognizing and coping with the tensions and incompatibilities of the development agenda. These attempts have thus tried to align very conflicting strategic orientations into a unified development agenda. The consequence has been that the different strategic orientations of the sector development agenda have been highly unstable when they have not been supported and shielded by specific development initiatives. The thesis consequently concludes that under circumstances where no dominant strategic orientation can be establish the appropriate governance response it to actively recognise the co-existence of several strategic orientations and allow them to develop and operate independent of each other. Such a governance approach consequently needs to dispense with the vision of an integrated uni-directional transition from one industrial configuration to another and rather begin to imagine the future operation of the construction industry as the co-existence of production and development activities organised by a set of very different mechanism of coordination and development. This implies that governance interventions should articulate the sector development agenda as a choice between a structured and transparent set of different problem representations and strategic orientations.

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