Networks and the Diffusion of Knowledge: The Norwegian Industry Committee in New York during the Second World War

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During recent years a number of studies on the diffusion of American organizational and management knowledge to Europe after the Second World War have emerged. Research on both sides of the Atlantic has moved from an initial focus on the transfer as predominantly a process of exporting knowledge from the US, to a current emphasis on the institutional, structural, and political factors in the recipient countries, and how these factors influenced the outcome of the diffusion process [Guillen, 1994]. Within this tradition, concepts like translation, transformation, rejection and adoption have been applied to analyze the processes taking place in the recipient countries [Amdam and Bjarnar, 1997; Amdam and Yttri, 1998; Kipping and Bjarnar, 1998]. Others have sought to cast new light on the interplay between actors in the US and European countries, using concepts such as cross-fertilization or networks as frameworks for their analysis [Gemelli, 1996; Amdam and Bjarnar, 1996; Djelic, 1998].

To what extent the recent focus on networks is mainly of a methodological nature, stressing the role of networks as a crucial and necessary part of empirical studies, or also implies a further theoretical development within this field of research, is a complicated question. In general, one of the challenges that continuously faces different theoretical frameworks is how to characterize and explain the apparently simultaneous phenomena of homogenization and internationalization of management models and business practices as well as the prevalence of national diversification of business arrangements [Djelic, 1998, pp. 8-14; Engwall and Zamagni, 1998]. An in-depth discussion of this question at a theoretical level is, however, beyond the scope of this article.

Nevertheless, within the research on post-war Americanization of Europe, the reconstruction of both personal networks and business networks is an essential and integral part of studying the diffusion process and assessing its outcome. The observation that the diffusion processes should be analyzed from the senders to the actual implementation of models has important implications

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for the research process as well as the characterization of the phenomenon of Americanization [Amdam and Bjarnar, 1997; Bjarnar and Kipping, 1998]. It necessitates an analysis of the American model itself. To what extent was it open to piecemeal borrowing, consisting of only loosely coupled stand-alone techniques? Or was it instead a package of tightly coupled interrelated and coherent elements, that, once adopted could be expected to fundamentally influence institutional arrangements, industrial relations as well as socio-economic and structural patterns? In the end, however, the degree of homogeneity or partiality of this model can only be analyzed in relation to how the model and its parts was perceived by those involved, both the senders, the institutions set up to facilitate the transfer, and the receivers. Thus, the individual's mental constructs of organizational models were strongly influenced by the nature of the transfer process in addition to their positions in social networks, business networks or within national institutions and political networks. The outcome of the transfer and the actual implementation must, accordingly, have been influenced by the character of the networks involved in the process [Bjarnar and Kipping, 1998].

Concerning the diffusion of American models of management education, it has been observed that these models created different patterns of challenge, resistance, change and adoption in different European countries [Engwall and Zamagni, 1998]. Inspired by American models many European entrepreneurial groups and institutions attempted to influence national institutional arrangements. Both within the field of management education as well as through the US productivity drive in Europe, such groups to some extent used American ideas and connections strategically. Although these 'reworking' processes may have had limited success, because they challenged firmly established national institutions, they nevertheless put national institutions under the influence of the internationalization of management education and training as well as business practices [Kipping, 1998 a, 1998b; Tomlinson and Tiratsoo, 1998].

Recently Marie-Laure Djelic has argued that the existence of personal networks between progressive Americans and European modernizing élites in some countries may explain the outcome of the diffusion process [Djelic, 1998]. This perspective implies that we have to go beyond 1945 as the starting point for the empirical research. If the existence of personal networks between players on both sides of the Atlantic is important to understand and assess the diffusion of American organizational and management knowledge after the Second World War, we have to link post-war processes to events before and during the war.

The purpose of this paper is to discuss the relevance of the network perspective by using the Norwegian Industry Committee in New York, which was operative from 1943 to 1945 as an example of a network active on both sides of the Atlantic. The committee was set up by the Norwegian Labor government in exile in London, and the five members of the committee were appointed by the government. Among the members of the committee, as well as the eleven sub-committees, there were several Norwegians who were sent to the US by

the government. The main body of the activists consisted, however, of Norwegian businessmen or engineers living in the US. Thus, unlike the networks depicted by Djelic, the committee consisted of players of the same nationality on both sides of the ocean.

Pre-war Networks Norway – The US

The Industry Committee in New York was established in November 1943 by the Norwegian government in exile in London. Its aim was to conduct studies of American industries in order to make plans for the reconstruction of Norway after liberation.[1] Due to the intended political purpose of the committee, the research literature has looked upon the committee as a tool for the social-democratic exile government to develop political plans for the modernization of Norway. Therefore, the committee has been mentioned as a source of ideas that inspired the development of the Norwegian post-war social-democratic political and economic system [Hanisch and Lange, 1986, pp. 32-6; Kvaal, 1997, pp. 280-86; Sevje, 1977, pp. 26-9; Sogner, 1994].

However, this was only one aspect of the committee. The network perspective is relevant here, because the committee consisted not only of people who were sent by the Norwegian government to the US to study American industry and technology during the war. The committee also managed to mobilize Norwegians who already lived in the US and had experience from working in American industries. It also linked its work to existing networks between the United States and Norway.

These networks were of three kinds: First, networks established by Norwegian businessmen who had moved to the US to promote Norwegian business interests. Second, Norwegians who during the inter-war period in Norway had represented a modernizing élite by participating actively in the political debate on how to organize Norwegian industries, and who saw American business as a model for modernizing Norway. Third, networks established by Norwegian engineers who had been working for American companies for several years.

The first kind of network was established by Norwegian businessmen who worked in the United States to promote their own - or Norwegian companies' - business interests, and therefore stayed in close contact with Norway. The committee in New York consisted of five people. Three of them were Norwegian businessmen of this kind. The chairman of the committee, Gustav Jebsen, had moved to the US to work for the National Lead Corporation. Early in the 20th century, Jebsen had been participating in developing and commercializing titanium dioxide white pigment in Norway. This became an international success, and was produced in the United States by the National Lead Company [Hounshell and Smith, 1988, p. 211]. In 1927 the National Lead Company bought the Norwegian company Titan. As a result, Jebsen became a

[1] NA/IKNY, 5, Oppnevnelse av medlemmer, Kgl. res. juli 1943.

manager on the international scene. Before moving to the US, he worked for titan producing companies in France, Great Britain and Belgium. Another committee member of this kind was Georg Hagerup-Larssen, who had moved to New York to promote the business interests of the Norwegian chemical company, Elektorkemisk [Amdam, 1999].

The networks established by the second group - those who represented the inter-war modernizing élite - were less concrete. More than being a network between individuals, it was a channel for transferring American organizational and management knowledge to the political debate on business organization in Norway during the inter-war years. On the one hand, we could say that the committee member Joakim Lehmkuhl represented the first group, since he had developed close contact with American industry in 1920s while studying at the Harvard Business School and MIT around 1920 before returning to Norway. Just before the outbreak of the Second World War he moved back to the US to establish the watch producing company Timex. On the other hand, he had also served as an intermediate agent for American management and organizational ideas in the political debates in Norway in the inter-war years, arguing that American principles for management and organizations should be implemented in Norway [Jakobsen, 1994].

Another representative for the modernizing élite was Ole Colbjørnsen, who represented the government as committee member. During the 1930s he had been the Labor party's key spokesman for the party's new economic policy. This policy was based on social-democratic principles. These principles were based on the idea that the economy should be based on private firms. However, the existence of private firms should be matched by an active state as the main economic coordinator on the national arena. The policy could be described as planned economy adapted to a capitalistic economy, and it was partly inspired by the five-year plans in the USSR, where Colbjørnsen had worked during the 1920s.

In the 1930s, Lehmkuhl and Colbjørnsen represented totally different political interests. Lehmkuhl was the chairman of the new right-wing anti-communist party, Federlandslaget, while Colbjørnen represented the Labor party. On the other hand, they had several ideas in common [Colbjørnsen and Sømme, 1933; Danielsen, 1984; Jakobsen, 1994; Lehmkuhl, 1933]. Even though Colbjørnsen admired elements of Stalin's economic policy, he also, like Lehmkuhl, saw American big business as a model for developing capitalism in Norway. They were both inspired by Taylorism. It was Lehmkuhl who in 1920 introduced the ideas of Fr. Taylor to the Norwegians [Lehmkuhl, 1920]. One expression of this admiration was their belief in engineering as the key profession of a technocratic regime. They also shared the conviction that mass production was a superior system of industrial organization. Both of them, furthermore, admired the hierarchical structure of American big business, and they transferred the idea of hierarchical governance to the national level by claiming that the state should play an active role within the economy, especially in periods of crises. This regard for the American mass production system

brought Lehmkuhl and Colbjørnsen closer together during their years in New York [Amdam, 1999].

The third kind of network was established by Norwegian engineers who had emigrated to the US during the inter-war period. Due to economic crises, hundreds of Norwegians engineers had moved to the US, numbering more than 700 from 1900 to 1933. Even though many of them returned to Norway after some years, a substantial number decided to stay to work for American companies on a permanent basis. During the war the Industry Committee in New York managed to mobilize around one hundred Norwegian engineers in American companies or research institutes as members of different sub-committees or as reporters to the committees. They provided the committee with information or participated in writing detailed reports based on their own experiences [Amdam, 1999]. In this way, they formed a competence reservoir that was mobilized by the committee.

Conflicting Interests

The government's intention was to use the committee to collect clearly defined technical information that could be useful in their preparation for the reconstruction of the Norwegian economy. The government's policy was based on the idea of division of labor. The government should make political plans, while the work of the committee was limited to giving input on technical matters. The government seemed skeptical towards letting people who were geographically remote from the center of the political milieu participate in the political process. The strong position of the right-wing politician, Joakim Lehmkuhl, within the Industry Committee in New York may be one reason for this. However, due to the strong and multi-faceted ties between the committee and American industries which are described above, a conflict emerged on who should decide the agenda of the committee's work, the government or the committee itself. This conflict brought the different groups within the committee closer together.

One expression of this conflict was the unwillingness of the committee to answer some of the detailed questionnaires on technical issues that were sent from London. According to the committee, some of these questionnaires were a waste of time, and prevented the committee from conducting tasks that were more important. The committee felt that they knew what kind of information was useful for Norwegian industries, not the people in London [Amdam, 1999]. Another expression of discontent was the committee's resistance to the command from London to focus only on technical studies of American industries. For example, the committee wanted to be active in placing orders in American firms, so that Norwegian companies were secured capital goods to modernize production.[2] In this case, the committee did not manage to challenge the gov-

[2] NA/IKNY, 8, Gjenreisningsdepartementet, IKNY ved Jebsen til Forsynings- og gjenreisingsdepartementet 25 June 1944; NA/IKNY, 27, Industriens gjenoppbygging, PM from J. Lehmkuhl 21 May 1944.

ernment's idea of division of labor. The committee had to drop this project because it interfered in what the government meant was the political sphere.

In several other cases, however, the committee demonstrated its ability to extend its work beyond the scope of technical investigations. For instance, belying the firm recommendations of the government, several committee members took active part in convincing American companies to invest in Norway after the war. One of these was Ole Colbjørnsen, who before the war had argued that foreign direct investments should be substituted by state investments [Colbjørnsen and Sømme, 1933], but who changed his view during his stay in the US during the war.[3] In 1943 he recommended that companies like Ford, GM and General Electric should invest in Norwegian companies.[4] Another example of conflicts was connected to the committee's strong ambition to extend its work to include studies of the organization of American companies. This aspect of the committee's work will be dealt with in more detail below.

Translating the Idea of Mass Production

The organization of American industry and business attracted the interest of several European governments during the war. In Britain, for instance, many regarded the productivity gap between American and British industry as a result of American superiority in management and organization. Several British missions to the US focused on management and organizational issues in their reports. This was the case within the textile industry,[5] the aircraft industry, military industry [Barnett, 1988, pp. 152, 164], as well as British industry in general [Rostas, 1948, pp. 29, 64-5].

In the same vein, the Industry Committee in New York also wished to explore management and organizational models. The Norwegian government in London, however, opposed this proposal, and urged the committee to keep strictly to technical investigations of production methods, means of production, and new inventions. However, the committee overlooked the warnings from the government, and in February 1945 it decided to include studies of management and organization in the committee's program.[6] From now on, the committee gave this subject priority.

The interest in focusing on management and organizational matters emerged as a common interest among all three groups of committee members,

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[3] NA/IKNY, 27, Introductory Remarks by Ole Colbjørnsen on Norway's Peace and Reconstruction Aims before The Group on Peace Aims of the European Nations of the Council on Foreign Relations, June 30, 1941.

[4] NA/IKNY, 27, Industrielle gjenoppbyggingsspørsmål, The Norwegian Embassy in Washington to Forsynings- og gjenreisingsdepartementet 9 June 1943.

[5] NA/IKNY, 36, Tekstil, Ministry of Production: Report on the Cotton Textile Mission to the United States of America, March-April 1944, London: His Majesty's Stationary Office, 1944.

[6] NA/IKNY, 7, Alm. oversendelse til komiteemedlemmene, G. Jebsen PM 30 May 1944.

the businessmen representing Norwegian companies on the American market, the representatives of the Norwegian pre-war modernizing élite, and the engineers who had concrete experiences from American industry. Their collective view could be described as general admiration of the American mass production system.

According to the committee, "the tendency to organize for mass production has continued and will continue."[7] American superiority concerning standardization, mechanization, vertical organization and corporate training and research was a result of the mass production system. Norway should, according to the committee, therefore "be aware of this tendency and in some case probably adopt it."[8]

Accordingly, the committee was also concerned with ways of transferring and adopting the mass production system to Norwegian industry. The problem was, as the committee was aware, that the mass production system was closely related to a mass market, which was not developed in Norway.[9] Therefore elements had do be adopted piece by piece. Large companies should, as Arne B. Holt, an engineer at the largest Norwegian company, the chemical company Norsk Hydro, claimed, study American experiences on vertical integration.[10] There was also much to learn from the organization of corporate training programs in American companies:

> It is believed this comparatively new field should be given great attention and should be studied carefully in Norway as it does not take a great deal of money but is more a question of effort and organization, and it seem might result in very considerable advantages, particularly in a country not so suitable for mechanized mass production.[11]

The Norwegian building and motor industry should, according to the committee, pay attention to specialization and standardization as a prerequisite for the introduction of mass production on a wider scale. Finally, the committee made substantial efforts to establish viable contact with American institutions that were experienced in the process of introducing modern organizational and management methods to smaller companies. One of these was the Small War Plant Corporation, with which committee members had several meetings.[12]

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[7] NA/IKNY, 10, G.Jebsen, PM from Jebsen, n.d.

[8] NA/IKNY, 10, G.Jebsen, AG Draft to Report 7 May 1945.

[9] NA/IKNY, 10, G.Jebsen, AG Draft to Report 7 May 1945; NA/IKNY, 28, Industripolitikk, Note prepared by G. Jebsen for discussion in Industry Committee Meeting 19 March 1945.

[10] NA/IKNY, 11, A.Holt, Report no. 10, 30 May 1944.

[11] NA/IKNY, 10, G.Jebsen, AG Draft to Report 7 May 1945.

[12] NA/IKNY, 28, Smaller War Plants Corporation, E.V. Ullmann to G. Jebsen 9 March 1945.

New Networks

As the war ended in May 1945, the Industry Committee in New York was dissolved. The committee, which was intended to be a tool for the Norwegian government to collect technical information on American industry, had developed into an arena for more general discussions, which included analyses of American organizational and management practices within the framework of the mass production system as a role model. The committee's activities were based on the existence of several pre-war networks between the US and Norway. In accordance with the network perspective, the question is to what extent the committee contributed to develop these networks further.

In one sense, this case is a story of destroyed networks. As mentioned, networks that included representatives from the Norwegian pre war modernizing élite, contributed to give the committee a promising start. However, after the war, the modernizing élite in Norway was restructured, and members of the New York committee were not included. Joakim Lekhmkuhl did not even try. Instead of returning to Norway to participate in the political debate, he decided to stay in the US to develop the Timex corporation. The other representative from the pre-war modernizing élite during inter-war period was Labor politician Ole Colbjørnsen. He returned to Norway, and was even elected to the Parliament. However, he never gained the same political position as he had had before the war. His vision before the war had been to develop closer relationships between the state, industry, and the unions based on formal corporate institutions, and he still believed in this. When he returned to Norway after the war, he was unprepared for the fact that new informal networks had developed between the state, the industry and the union [Berg 1987, p. 256]. Some of these informal networks were created during the war, but not in New York. Stockholm and London were far more important exile centers for creating a new modernizing élite than any city in the US.

Colbjørnsen's inability to regain his position among the modernizing élite is one reason why the Industry Committee in New York has been treated as a parenthesis among Norwegian historians. However, we will argue that the work of the committee had influence on the modernization of Norway. Instead of strengthening the networks between American business and the new political regime in Norway, which had been the intention, the committee contributed to strengthen and create new networks on a personal and business level. The most important outcome of the committee seems to have been that the committee members on individual basis took with them what they had learnt through working within the committee, and implemented new practices in their own businesses after the war. The most striking example is Joakim Lehmkuhl, who in the US developed Timex into one of the world's most modern watch making companies [Jakobsen, 1994, p. 79]. Another example is Georg Hagerup-Larsen and some of his colleagues at the New York office of the Norwegian chemical company Elekrokemisk (Elkem). Before returning to Norway in 1945, he made preparations for a plan to diversify the company

based on American experiences. This plan was implemented from the late 1940s [Amdam, 1999].

Conclusion

During the 1950s Norway developed into one of the European countries that was most positive towards American support and advice on organizational and management matters. Mainly, this phenomenon can be explained by Norway's enthusiasm for the organized European productivity movement through the OEEC. Norwegian commitment to the European Productivity Agency was one expression of this attitude. Being a member of these organizations made a real impact on changing business practices in Norway [Amdam and Yttri, 1998].

However, other channels also existed, like personal networks [Moseid, 1998], business-to-business networks, and networks at regional levels [Amdam and Bjarnar, 1997]. The strength and importance of such networks are underinvestigated. We know that they existed, and that the Industry Committee in New York was one of the institutions that contributed to developing new networks. Detailed studies on the strength and character of such networks should be conducted to increase our knowledge of the Americanization and modernization of European post-war industry.

In this paper we have shown that even though the Industry Committee was comprised of members of the modernizing élite who had been active in promoting the American mass production system as an overall production system before the war, and the committee discussed general aspects of the American mass production system, the committee did not attempt to reach beyond the piecemeal borrowing of organizational techniques when it came to concrete advice. This adjustment of ambitions could be explained as the result of a deeper understanding of the complexity of American business, coupled with an understanding of the structural and institutional constraints at the national level in Norway preventing the adoption of the mass production system on a wider scale. This ambition was suitable for the transfer of knowledge that took place within individual networks after the war, networks that gave strength to the diffusion that took place within channels on a national level. It seems, even though it has not been fully investigated yet, that the existence of these personal networks enabled the committee members to diffuse pieces of the American mass production system to Norway, in a situation when they were not accepted as members of the new modernizing élite.

Abbreviation

NA/IKNY	National Archives in Oslo, Industry Committee in New York

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