

## **Business Discourses in the Innovative Cancer Treatment Research Market in Europe: Existence and Maintenance of a Market**

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The paper discusses preliminary findings of an ongoing research project, which aims to elucidate empirically and theoretically the structures and strategies in markets of innovations over time. The empirical analysis focuses on European biotechnology companies, which are integral in pioneering oncological research, specifically in breast cancer therapeutics. Complementing existing sociological studies on the biotech industry, on cancer treatment research, and on research and development (R&D) strategies, the research project employs an original approach to explain changes and shifts in research on cancer therapeutics over time: it examines the specific business discourses of the different players involved in the innovative cancer treatment research market in Europe between the mid-1990s until the present.

The de-coding of the human genome marked a definite shift in cancer research from surgical and destructive treatments of tumors to genetically engineered, targeted therapeutics: with better understanding of tumor development, innovative research on treatment now combines insights from genomics, proteomics, molecular biology, and bioinformatics. Especially proteins and monoclonal antibodies but also advances in gene therapy are believed to be able to either stop the growth of tumors or destroy the tumorous cells from within. The industry's hopes are high that a cure for lung and breast cancer, the two deadliest types, will be found within the next 5 years. Together with their US competitors, European research-intensive firms are competing against each other to find a blockbuster cure and, of course, are striving to hit a financial jackpot in this high-risk market.

What are the dynamics in this market of innovative cancer treatment research? And, How can we best analytically grasp its existence and maintenance? Over the last two decades, the phenomenon of “the market” has received increased sociological attention. Rather than using “the market” in an abstract notion to explain different instances of market exchanges, sociologists have been seeking to specify the mechanisms through which the market is constituted by noneconomic factors. This line of inquiry into the transactional specifics of markets has been guided by the assumption that actors are embedded in a network of relations. While analysts in the field of technological innovations, especially in the biotech industry, predominantly focus on networks as the “pipes” (Podolny 2001) through which information and actual resources flow, which in turn enable collaboration and organizational learning (e.g. the work by Powell and his collaborators), this project takes as its analytic starting point the idea that the presence (or absence) of a tie between two actors is always an informational cue on which others rely to make inferences about the patterning of market relations. This idea follows White (1981), who shows that the key variable in the construction of markets is that participants “watch each other within a market” to obtain cues on others' action and moves. Podolny similarly suggests that the cognitive and evaluative capacities of economic actors in a network function as a “prism”. “Networks as prisms” help actors to make sense of their market for purposes of status ordering (Podolny 1993) in that they enable the evaluation of other actors' products (Podolny 2001). Networks in this view do not only embed actors or can be understood as governance structures. They are constitutive of actors' identity and social action in general (e.g. Padgett 2001; Padgett and Ansell 1993).

Moreover, research has shown that ties in this “prisms” understanding can also be under-

stood as more than mere observations: it is stories and their sequential exchange that help to shape and to maintain social structures and their actors (e.g. Bearman 1993; Bearman and Stovel 2000; Franzosi 1998; Mohr and Lee 2000). In this sense networks constitute a web of meaning, in which, simply put, stories are the ties and actors the nodes. This points to the understanding that narration and social structure are necessarily intertwined: as people or organizations act, they create accounts. In turn, these accounts constitute actors, as they come to know who they are with and against others. Processes of identity formation can then be understood as a narrative sequence, in which events and actions are linked to each other. Stories are the ties, which connect actors and actions over time and help constitute each actor's identity (White 1992).

Just like other social relations, economic network relations thus maintain themselves through discourse. Stories about one's firm help to constitute the firm's identity. At the same time stories serve as evaluation of others (what one is not, what one is like) contributing to the maintenance of others identities in a market. Moreover, competitors, or those actors who regard themselves as belonging to the same market, are watching each other and will in their stories, about a recent invention, a new approach, or "the best way" signal to all players in the market. The social ties of narrated competition, be it antagonistic or friendly, help to build each actor's profile.

In their attempts to find a cure for breast cancer, pharmaceutical companies, biotech firms, and nonindustrial research teams follow different research programs on how to tackle best the tumorous cells. In observing and in communicating with each other, market competitors are expected to reevaluate and reconfigure their R&D strategies in order to establish a niche and secure an identity. My fundamental assumption is that it is inefficient for biotech companies to be competing with each other for the same therapeutic innovation following the same research hypothesis and analyzing the same mechanism. Instead, they position themselves vis-à-vis others in their research strategies – in accordance with their own past experiences, present funding, and future trajectory as well as in reaction to some shared frame of perceived competition. The exchanges of biotech companies in business discourses, for example in industry and science journals, brings their positioning and niche-seeking to the forefront. At once then, the analysis of structure (their positioning vis-à-vis the competition) and content (their drug research strategies and their product pipeline) is possible.

For my analysis I suggest a methodological approach that fittingly matches the theoretical exposition: it combines the analysis of structures (network analysis) with that of stories (narrative analysis) by using sequence analytic procedures. Sequence analysis and further categorization methods can help to discern typical patterns over time (e.g. Abbott and Hrycak 1990; Blair-Loy 1999; Stark and Vedres 2006), in this case, of research strategies in the "careers" of biotech companies. The paper presents preliminary empirical findings of the evolving European market based on business discourses in science journals and general newspaper articles. The analysis of texts focuses on the emergence of the market the mid-1990s and highlights the pattern of research strategies of major players in the field. Concentration lies in particular on German, British, and Scandinavian biotech firms. In general, my analysis illuminates the interpretative work necessary for the existence and maintenance of the market: I highlight the role of discourse as the principal medium of a market, which is understood as a social construction created, used, and reproduced by participating actors. My work contributes to recent developments in the opening in economic sociology towards cultural sociology, when focusing on the role of cognition and stories as mediators of competition, and when employing a methodological approach that can account for patterns in

data over time.

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