

Commentary

Successful management of chemical sites: A challenge for management theory and practice

Comments on the article: "The future of German chemical sites: Potential pathways and organizational readiness." by Clara Hiemer and Carsten Suntrop

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The question of how to organize and manage chemical sites is as old as the Chemical industry itself. It gained new importance approximately 25 years ago when the British Imperial Chemical Industries (ICI) finalized its corporate transformation process in the early 1990s. Part of this reorganization included a new organizational structure and a new business model for chemical production sites. The German Hoechst AG followed swiftly in the mid 1990s with a new corporate structure that was subsequently copied by quite a few of its German and international competitors. In both of these cases, new answers had been found concerning how to organize and develop the chemical sites of multinational players: Legally separated site service companies were created under the roof of a corporate holding company, providing infrastructure services to a number of independent operational tenants at various sites. Some of these operational tenants belonged to the same corporate structure, some of them were third parties. The underlying rationale behind this new structure was to bring a "market orientation" into the management of production sites, to make information on site- and management performance more transparent, to significantly increase flexibility so as to adjust business portfolios and to reduce operational costs. In the case of Hoechst AG, the hollowed-out site service companies also became the owners not only of the infrastructure assets (e.g. the waste management facilities, the energy production facilities), but also of the land upon which their respective sites were based. Even though these restructurings received a lot of public attention, in general the vast majority of chemical companies have retained

the established structure of integrated chemical site infrastructure and services to this day.

These developments already hint at the fact that there is no one single model for organizing and steering chemical sites successfully. Analyzing the benefits of alternative organizational and business models for chemical sites, coming up with root-cause relations and formulating hypotheses about the developments of chemical sites over time are therefore important tasks for a practice-oriented management theory in the context of the chemical industry. Managers of the approximately 60 industrial parks in Germany (see German trade and invest description), as well the site operators of the hundreds of different production plants in Germany, are continuously looking for the best solution for fulfilling safety, security, quality, costs, environmental and flexibility requirements by optimizing their chemical sites and site management. They stand to benefit from scientific insights on successful site management approaches and are also potential research partners.

Pathways within the chemical industry in general are an interesting scientific topic from a historical, technical and economical point of view. Chandler (2005) has done valuable work in analyzing the business models of chemical companies over time (Chandler, A. D. (2005): *Shaping the Industrial Century*. The remarkable story of the evolution of the modern chemical and pharmaceutical industries. Harvard University Press. Cambridge). A comparable work analyzing management approaches of chemical sites is still missing. In their article, "The future of German Chemical Sites: Potential pathways and organizational readiness", Clara Hiemer

and Carsten Suntrop present a study design with which to assess the status quo and the future challenges chemical sites might need to confront. They define a chemical site as “a geographical cluster of legally independent chemical suppliers/industrial consumers”. The article provides a brief introduction to the topic by describing potential pathways of the global chemical industry, highlighting potential development paths for the management of chemical sites and outlining some of the internal prerequisites chemical site managers need to fulfil in order to prepare for future challenges.

The authors select a “multi-faceted” definition of chemical sites and consider the perspectives of different stakeholder groups. This approach sheds light on the role of stakeholders and the influences they have.

In their research design they distinguish between a market view (What are the external driving forces shaping the chemical industry and having an impact on successful chemical site management?) and an internal view of chemical sites (To what degree is a chemical site ready to take on the identified challenges?). The authors propose a multi-method approach to analyzing the strategic developments in the site management of the chemical industry: First, they intend to collect and consolidate information about participating chemical sites. Second, they intend to conduct quantitative and qualitative data collection from different stakeholders. Through an online-survey they intend to ask participants about their opinion on different potential developments for the chemical industry and their implications for chemical sites. Face to face interviews are planned with selected participants.

From a management perspective it is highly interesting to gain an in-depth understanding of the rationale behind the different business models implemented at chemical sites. A transparent overview of chemical sites in Germany could be a first step in an effort to obtain an overview of competing business models and their growth potential over time. Hiemer and Suntrop propose a large-scale online survey and selected interviews to analyze strategic developments in site management of the chemical industry. Whilst these data sources may provide interesting insights, I would propose adjusting and complementing the approach by having dedicated in-depth case studies and historical studies. These additional methods would help to identify development patterns over time and allow an explicit outline of the underlying root-cause assumptions that lead to management decisions. The insights derived from this approach could serve as a reliable basis for practitioners in formulating their own assumptions about the future development of the chemical industry, the require-

ments successful chemical sites need to fulfil in the future as well as guidelines for each action. The results would have to respect and take into consideration the highly distinct perspectives held by investors, site operators and -owners or managers.

With regard to the “internal readiness” of chemical sites to pursue successful site management strategies, Hiemer and Suntrop propose an in-depth analysis of the cost structure of chemical sites. They intend to gather this information through the aforementioned online survey, but also by conducting additional personal interviews. Instead I would propose the gathering of information by way of an independent and professional service provider in cooperation with the “Fachvereinigung Chemieparcs” of the German Chemical Manufacturers Association (VCI). The Fachvereinigung is currently discussing a state-of-the-art benchmarking study to identify and share the relevant information within a group of panel-participants on an anonymized basis in a longitudinal study. In my experience, reliable cost information is not easily gathered in large-scale online surveys. In contrast, in a community with a common interest – such as the Fachvereinigung – the probability of gathering high quality information would in all likelihood be higher as the participant companies would have a higher level of commitment to the study (which they commissioned themselves) in comparison with an online survey. In general, the results from benchmarking chemical sites in Germany could support site operators or managers in their day-to-day business by strengthening their competitive position and increasing their attractiveness for chemical companies.

A scientific analysis of the structural changes of chemical sites over the past decades alongside the general development of the chemical industry might also consider the following questions:

- Which criteria drive regional investment decisions in the chemical industry – and how are these criteria changing over time? What makes them change?
- What are the implications of changing regional investment decisions with regards to the required infrastructure in terms of size, location, service portfolio, ownership structure, etc. for existing sites and new sites?
- Which criteria determine make-or-buy decisions in the chemical industry – in particular with regard to infrastructure and infrastructure related services?
- Which considerations are needed to properly evaluate competing management models for chemical site managers/operators (organizational rules vs. market mechanism)?

- Who is the “rightful” owner of the infrastructure of a chemical site – and why?
- Is there a useful lifespan of chemical sites – and how is it determined?

The questions above represent an additional set of topics which also need to be considered when addressing possible future pathways of chemical sites. Answers to these questions might help managers of chemical sites (operators, investors) to identify future areas of interest or suitable pathways for chemical sites. In order to address these questions appropriately, a broad coalition of actors is needed: Companies need to share their own reflections on successful chemical site management. Researchers need to apply a broad range of quantitative and qualitative research methods – ranging from historical case studies, to expert interviews and large-scale surveys. And industry associations need to create a supportive environment for open discussion of research approaches and findings. From my point of view, finding answers to these questions is well worth the effort.

References

Chandler, A. D. (2005): *Shaping the Industrial Century. The remarkable story of the evolution of the modern chemical and pharmaceutical industries*, Harvard University Press, Cambridge.
