

# Market Translations Mechanisms: Interconnection Between Technology Development and Market Shaping

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## Acknowledgements:

This work was supported by FAPERGS (Foundation for the Support of Research in the State of Rio Grande do Sul)

## Cite as:

Dalmoro Marlon, de Rezende Daniel (2024), Market Translations Mechanisms: Interconnection Between Technology Development and Market Shaping. *Proceedings of the European Marketing Academy*, (122568)

Paper from EMAC Regional Conference, Lisbon, Portugal, September 25-27, 2024



# **Market Translations Mechanisms: Interconnection Between Technology Development and Market Shaping**

## **Abstract:**

The relationship between technology and marketing, often viewed as a linear process of resource transfer, is reexamined in this paper. We explore the intricate dynamics between technology and marketing, using constructivist market studies as a lens. Our aim is to understand the mechanisms that create a dynamic interconnection between the heterogeneous practices in the technology and market domains. Through a qualitative empirical investigation of the Brazilian fine cheese market, we uncover the translation mechanisms and practices that shape the materiality, discourses, and symbols that drive companies' efforts in market shaping. Finally, we discuss theoretical and practical implications.

*Keywords: Translation mechanisms, constructivist market studies, Brazilian cheese market*

## 1. Introduction

The intersection of technology and marketing has been the subject of intense reflection and debate in academic and practitioner circles (Blut & Wang, 2020; Leachman & Scheibenreif, 2023). Typically, previous marketing studies describe the relationship between technology and product creation (Hoffman et al., 2022; Bresciani et al., 2021) and technology and experience co-creation (Alexander & Kent, 2022; Ma et al., 2024). However, in parallel, constructivist market studies offer an actor-practice-oriented perspective to explore the relationship between technology development and market construction as a dynamic process. For Kjellberg et al. (2015), the technological dimension of innovation is generally treated as primary or external to the market construction process, being incorporated by market actors in their marketing practices. However, technology development is an important resource not only for marketing practices but also for shaping the market construction dynamic (Kaartemo & Nyström, 2021; Nenonen et al., 2021). In accordance with these scholars, we emphasize the significance of comprehending the dynamic alignment between heterogeneous technologies and markets within a dynamic process.

This study seeks to associate the notion of market practices (Kjellberg & Helgesson, 2006) with the concept of market translation mechanisms. Latour (2012) argues that the process of innovation and change is best understood as a series of interconnected translations and networks rather than a linear and rational transfer of knowledge or technology. Exploring the idea of market translation mechanisms allows us to describe technology transfer more holistically, recognizing the diversity of actors, interests, and influences that shape and reshape different markets.

We follow the argument that technologies do not consist of taken-for-granted resources in marketing practices but are shaped through heterogeneous practices that develop technologies – i.e., new products – in concomitance with market dynamics. Kjellberg et al. (2015) recognize that the technological construction of markets is not limited to creating a new market but also involves transforming market structures, incorporating new devices, changing the behaviors of market actors, or even connecting heterogeneous actors around a common network. However, while the relationship between technological and market dynamics is evidenced in the previous literature (Nenonen et al., 2021), the mechanisms that establish the interconnection between these dimensions remain unclear.

Our aim is to understand the mechanisms that create a dynamic interconnection between the heterogeneous practices in the technology and market domains. As we describe next, we explore the dynamics between technology and marketing by following the theoretical lens of constructivist market studies.

## 2. Theoretical background

We adopt as a theoretical lens the market studies perspective popularized by Araújo et al. (2010). Recognized as ‘constructivist market studies,’ this lens focuses on multiple actors' practices to understand the dynamic market shaping process (Kjellberg & Helgesson, 2006; Nenonen et al., 2021; Kjellberg & Murto, 2021). This perspective elucidates the intricate interplay of socio-material arrangements and sociotechnical practices, shaping and reshaping economic exchanges (Pels et al., 2022). Markets are described as fluid entities, constantly evolving through multiple actors' diverse roles and practices, underscoring a dynamic nature (Araújo, Kjellberg & Spencer, 2008; Harrison & Kjellberg, 2016).

In specific terms, the description of market practices follows the typology presented by Kjellberg and Helgesson (2006), involving (a) representational, (b) normative, and (c) exchange practices. Previous studies aptly describe the process of aligning these different

practices in market construction (Kjellberg & Helgesson, 2007). However, it is equally important to identify the elements capable of connecting these heterogeneous practices into a homogeneous network. Initially proposed by Kjellberg and Helgesson (2006), the market practices model suggested that a chain of translations ensures this connection. Depending on the configuration of these translations, multiple versions of the market can be constructed (Kjellberg & Helgesson, 2006). Translations ensure that not everything produced in a particular practice is necessarily transferred to the market, and they can generate inconsistencies, incompatibilities, or even conflicts. These incongruities among heterogeneous practices limit the configuration of market arrangements. However, they can become even more complex when they involve practices that do not operate within a market dimension but are crucial in supporting market practices, such as technological product development.

Translation is understood as the process of building connections, forging passages between domains, or establishing communications that create associations and generate effects capable of shaping socio-technological realities (Latour, 2005). By using the concept of translation, Latour (2012) emphasizes the dynamic relationship through which actors configure a network. In this study, we depart from the concept of translation to explore how heterogeneous practices occurring in a technological development dimension operate within chains of translation capable of creating connections that shape a market. For that, we illuminate multiple actors and heterogeneous practices that perform technology development in cheese production while shaping the fine cheese market. The following section details the methodological aspects that guided our empirical plan.

### **3. Method**

In methodological terms, we adopt an interpretive perspective to collect and analyze qualitative data on the Brazilian fine cheese market. This market is defined as a socio-technical arrangement framing the production, marketing, exchange, and consumption of cheeses with unique organoleptic, normative, and symbolic characteristics compared to common cheeses. By focusing on a specific product category as a market analytic frame, we get greater precision in delineating the market under scrutiny and adhere to established methodologies found in prior market research (Maciel & Fischer, 2020; Dalmoro & Fell, 2020).

The features of the fine cheese market make it a suitable context for studying the relationship between technology and market domains. Firstly, it is a mass-consumption food product worldwide, with an extensive structure of suppliers, production, and distribution. Additionally, it is a product whose meanings are stabilized over time. However, large-scale production involves technology management by a complex network of human, organizational, and non-human actors (Rezende et al., 1999). Furthermore, the Brazilian fine cheese market has been undergoing an acceleration of technological transformations due to the entry of multinational companies (Ries, 2019).

Empirical data collection involved multiple data sources aiming to describe events, activities, actions, and participants' perceptions regarding the studied phenomenon. Initially, secondary data collection accesses information about socio-historical aspects of cheese production and marketing processes. Sources consulted included (a) governmental (sector databases, reports, and regulatory documents), (b) corporate (advertisements, reports, and documents published by companies), and (c) industry representatives, involving data obtained from institutions that organize and manage the cheese industry interests.

Additionally, in-depth interviews (14 interviews with managers and consultants in the cheese industry) and ethnographic interviews (6 interviews with cheese producers) were

conducted. Following McCracken's (1988) guidelines, we elaborated a script to guide the interviews. A snowball sampling technique was employed to select interviewees aiming to access diverse profiles (company managers, cheese company owners, cheesemakers, consultants, technology developers, and industry spokespeople). The interviews were conducted and recorded by the first author, in-person (virtually or physically), with an average duration of 60 minutes. The number of interviews was determined by data saturation (Glaser & Strauss, 1967).

Data analysis followed conventions associated with interpretive research, involving an inductive analysis and interpretation process, subsequently compared with theory to advance theoretical understanding (Lofland & Lofland, 1995). The protocol for generating analyses followed Saldaña's (2015) instructions, highlighting codes in the database considering the type of emitting actor and subsequent grouping into analytical categories. Categories were defined in dialogue with the literature, involving market practices, product development practices, and translation mechanisms. Next, we detail the findings.

## 4. Findings

### 4.1 *Heterogeneous practices shaping market and technology domains*

The first step in understanding translations involves mapping the differences between actors' practices and associating them with dimensions capable of illustrating translation chains that configure markets (Kjellberg & Helgesson, 2006). Data analysis revealed that the production technologies dimension involves three sets of practices: innovation practices, market reply, and incorporation of third parties' solutions.

Innovation practices encompass the development of innovations that generate new products and incremental transformations in production processes, packaging, and product presentation. Interviewees describe that investment in product development innovation stems from the desire to identify a new product capable of supporting market creation. Mateus explains that, since the beginning, the fine cheese company he founded had invested in R&D to identify bacteria that could result in innovative products. His goal with that is to create products with exclusive *terroir*. However, innovation practices do not always generate disruptive effects in the market: "Sector innovations are rarely disruptive, but rather adaptations within categories. The main example in recent years is innovation in packaging, presentation, and fractionation" (Silmara).

A second set of practices involves 'market reply,' meaning they seek to technologically develop products according to the identification of a commercial opportunity: "Actually, the idea of creating a fine cheese was raised by a supermarket manager - 'I'm thinking of a product here, let's see if you guys can make it,' so we brought it into the industry, and it worked" (Ezequiel). The last set of practices involves incorporating third-party solutions, like technologies developed by suppliers and consultants. Upon analyzing several examples of fine cheese development, we observe that the vast majority of products had been developed and presented by companies that supply dairy yeasts. The interviewees corroborated this perception: "The existing technology comes from outside; this role of technological development is carried out by foreign companies that produce machinery and inputs" (Silmara).

These sets of practices operate on a dimension of product technological development, whether more or less innovative, shaping a domain that aggregates the technological resources and meanings in market translation chains. However, these technical practices are only relevant when associated with market practices that extract commercial value from the developed products. We identify these market practices following the model of Kjellberg and

Helgesson (2006; 2007), starting with exchange practices. In this regard, interviewee Marcela comments that all the technological development efforts in her company have been guided by the understanding that there is a growing consumption of fine cheeses, which may present good business opportunities. She highlights a shift in consumption patterns: "So people don't just want to consume regular cheese anymore, they want to consume differentiated cheese. Eating is an experience for upper and upper middle social classes, so consumption of fine products has been growing a lot; we see this with coffee, beer, wine, bread, pasta, and, of course, it's happening with cheese, too" (Marcela).

The second set of practices involves the construction of representations. In the case of fine cheeses, we observed an associative effort integrating producers with other actors engaged in promoting cheese production. Among these actors, we highlight the activities promoted by the governmental rural extension bodies. By taking as an illustrative example the *canastra* cheese production, a type of cheese produced in Minas Gerais, Brazil and awarded as one of the best Brazilian cheese.. The rural extension bodies act in offering technical support and training to small cheese producers to qualify the artisanal production. They also work to associate the culture and history of regions and local knowledge with the cheeses. Some of these products used to be commercialized by small farmers without governmental registers. After recovering the historical origin of this type of cheese, qualifying the producers in terms of sanitary standards, and supporting them to obtain the register – including some efforts to facilitate the bureaucracy for that, the cooperation between the governmental body and producers allowed the oblation of a declaration of Origin Denomination. As a result, this type of cheese has become a product recognized as fine, with specific technical standards valued by consumers. In addition, we also observed a frequent effort from producers and industry representative bodies to associate fine cheese with haute cuisine. For that, they mobilize around their network of influencers, chefs, and communities of enthusiasts.

The last set of practices involves regulation practices. Firstly, the effort of producers to obtain regulatory approval for their products from government inspection agencies is an opportunity (as previously described in *the canastra* cheese case) but also a challenge to allow the authorization for introducing a new product to the market. An example is the effort described by Jackson. He is a small producer and developed a fine cheese with lavender. As there were no guidelines on using lavender in food production in Brazilian legislation, he sought an argument in U.S. legislation to persuade health inspection. With this argument, it was possible to register the product for commercialization. As evidenced in practice descriptions, market practices are imbricated with product development practices. The central question posed in this study involves identifying how these heterogeneous practices align to build the arrangement of the fine cheese market in Brazil. For that, next, we describe four mechanisms that interconnect the domains in a chain of translation.

#### 4.2 Translation mechanisms

The first mechanism is market opportunity. It shows to the technology developers that consumers might adopt the product. Interviewee Raquel illustrates how the introduction of the first gruyère-type cheese into the market was seen as an opportunity by the company's managers to expand the development of new products: "The first cheese we made was gruyère, which was very successful; people liked it, so we started to expand the product development" (Raquel). Thus, when the company identifies an opportunity in one domain, it activates practical action in the other domain to capitalize on the opportunity.

The second mechanism is the capacity to mobilize a network in the effort of shaping the fine cheese market. This mechanism allows for the complementation of actors' capabilities and practices. Interviewees report that producers, in general, are dependent on raw material

suppliers, especially milk farmers. Therefore, developing fine cheese requires milk producers to be willing to improve dairy production. Ezequiel reports that the main obstacle to expanding production capacity and launching products is obtaining milk suppliers who are able to deliver milk with the quality standards required to produce fine cheese. When the producers are able to mobilize a network of suppliers, they can develop new products and offer high-quality products. The network operates as a mechanism that assists both the technical feasibility of production and product representation in the market.

The third mechanism involves an innovation transfer chain. This mechanism illustrates the classic view of transferring new technology to the market in the form of a product. However, instead of a dyadic transfer from the technology creator to the technology user, the mechanism involves chaining a transfer chain of solutions shared by multiple actors. With that, companies are able to obtain new products faster. Daniel comments that the distance between the product development process and its arrival in the market is significant when considering a commercial product. He mentions a need for speed in transferring technologies from one actor to another; otherwise, years of research are spent to reach a product suitable for the market, followed by years to develop production capacity.

The fourth mechanism is negotiation, involving adjustments and concessions among actors to allow the technology to be incorporated into market practices. Marcela mentions that researchers sometimes focus on isolating strains in the technological development of cultures. However, it is necessary to align that with the consumer's interests.

These four mechanisms translate discourses to construct ideologies and identities that guide normative and representational practices. It is evident that discourses even discourage companies from engaging in developing new products with the purpose of expanding the market. For example, large companies have a discourse that states that building new products to expand the fine cheese market is impossible because governmental technical regulations do not allow it. Discursively, they act in posing 'standard' normative practices as inhibitors to market practices, but they also reinforce these norms when creating the rules together with the Ministry of Agriculture. On the other hand, cheese dairies associated with artisanal production recognize that, despite the legislation, there are no impediments to creating new products.

Along these lines, the mechanisms also operate symbols transferred from one dimension to another. Marcela comments that the construction of symbols to represent fine cheeses, such as recognition labels and awards, triggers the expansion of technological development practices: "The interest in awards drives technological innovation and not necessarily the creation of a new product to meet a new market. The effort to innovate is stimulated by awards and recognition, improving basic product offerings" (Marcela).

Thus, the mechanisms are responsible for translating not only the materiality developed to be incorporated into market practices but also connecting the desire to act in market shaping with actions of product development following discourses that (des) stimulate the actors' practices. Mechanisms also operate symbols that aid in fabricating a reality capable of associating what is going on in the market with technological product development practices.

## **5. Discussions**

Our findings contribute to elucidating the dynamic processes that underlie the relationship between technology development and market shaping. Our analysis separates the sociotechnical reality that composes the fine cheese market into two domains and provides a detailed description of practice heterogeneity. However, these heterogeneous practices are interconnected in a dynamic process necessary to align the domains on the same ontological plane, raising the market. The dynamic process involves four mechanisms that connect the

domains through establishing materialities, discourses, and symbols that create associations and generate effects capable of shaping the socio-technological reality recognized as the fine cheese market. These materialities, discourses, and symbols are translated from one domain to another through translation mechanisms. Thus, the results confirm that technology is not a ready-to-take resource incorporated into the market through transfer mechanisms (Kjellberg et al., 2015; Nenonen et al., 2021), but the result of practices that depend on a translation chain aligning with the market domain. The interconnection between the dimensions operates dynamically, transforming practices, incorporating new devices to be exchanged in the market, and altering norms and representations that change the socio-technical arrangement identified as the fine cheese market. Figure 1 illustrates the dynamic translation process to the market described in the study.

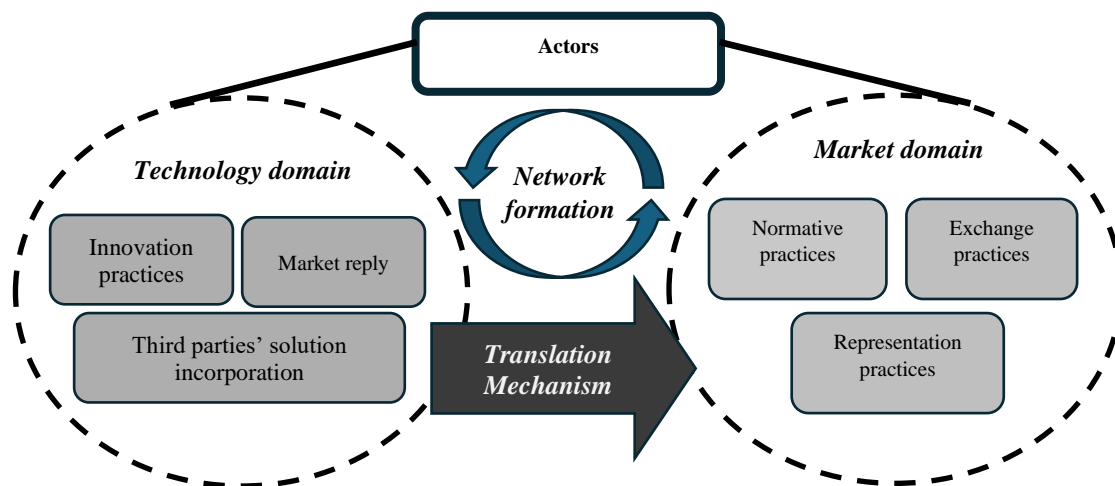


Figure 1. Technology-market translation dynamic process

In line with the proposed framework, the study reinforces the need to understand the interconnections between actors in establishing a translation chain between the domains of technology and market. Nenonen et al. (2021) describe how market actors can channel technology into a practice that results in a new market. However, channeling technologies requires effort from an actor who can gain market advantages through innovation. Although the authors recognize that channeling technology by the market through a single actor provides temporary stability in favor of this actor, not all actors are interested in channeling technology - actors may be interested only in technological development without manifesting a market orientation - and may not have the capacity to carry out this channeling, as is the case with small artisanal cheese producers.

Previously, Geiger and Kjellberg (2021) proposed that the interconnection between actors involves 'mash-ups' capable of generating relationships, reinforcements, and interferences. These 'mash-ups' would be able to connect different markets and stabilize a common framework. Thus, the authors consider the markets to be pre-existing arrangements, and actors operating in the market engage in 'mash-ups' with actors from other markets in building innovations. The concept of translation to the market proposed in this study complements the vision of 'mash-ups,' recognizing that actors can operate heterogeneous practices not necessarily associated with a single market dimension. They act to establish translation chains from multiple market versions, which may or may not be unified in 'mash-ups.' For example, the convergence between the artisanal and fine cheese market versions allows for creating a market 'mash-up' in the manner described by Geiger & Kjellberg (2021). However, the interconnection also involves heterogeneous practices from multiple market



versions within the technological domain. Thus, market translations connect distinct markets and domains that contribute to constituting the market sociotechnical arrangement.

Finally, from a practical standpoint, the study contributes by describing mechanisms capable of guiding the participation of small businesses in the technological development and marketing shaping dynamic. Previous studies (Maciel and Fischer, 2020) provide some clues on that. In this study, we offer details about the mechanisms that make small businesses more conscious of the complexities of developing new products with the purpose of shaping a new market. Small businesses may not be able to make investments in product development, but they can access technologies with the support of a network or get benefits from third-party solutions. From a practical perspective, the proposal does not aim to make small businesses controllers of market transformations or even technological transformations but to make them aware that they may be active market actors in practices forming a translation chain that dynamically connects product development with market transformations.

## 6. Limitations and suggestions for further studies

After conducting this study, we recognize some limitations and identify them as catalysts for further research opportunities. Firstly, the complexity of articulating concepts operating in different ontological perspectives, such as translations (ANT), practices, and structures, is worth noting. Thus, future studies could extract partial elements from the process described in Figure 1 and explore them through a unique epistemological lens. In particular, it is recommended that new studies detail the performative effect of translation mechanisms (Callon, 2022). Second, even though our analysis considers a specific context (Brazilian fine cheese), it reinforces the capacity of product category analysis to offer insights for further theorization. Shedding light on the fine cheese market also allows us better to understand agri-food markets of great social and economic relevance.

## References

- Alexander, B., & Kent, A. (2022). Change in technology-enabled omnichannel customer experiences in-store—*Journal of Retailing and Consumer Services*, 65, 102338.
- Araujo, L., Kjellberg, H., & Spencer, R. (2008). Market practices and forms: introduction to the special issue. *Marketing theory*, 8(1), 5-14.
- Araujo, L.; Finch, J.; Kjellberg, H. (2010). *Reconnecting marketing to markets*. Oxford: Oxford University Press.
- Bresciani, S., Huarng, K. H., Malhotra, A., & Ferraris, A. (2021). Digital transformation as a springboard for product, process, and business model innovation. *Journal of Business Research*, 128, 204-210.
- Callon, M. (2021). *Markets in the making: Rethinking competition, goods, and innovation*. Princeton: Princeton University Press.
- Dalmoro, M., & Fell, G. (2020). Dimensões artesanal e massificada na construção do mercado cervejeiro. *Revista de Administração de Empresas*, 60, 47-58.
- Geiger, S., & Kjellberg, H. (2021). Market mash ups: The process of combinatorial market innovation. *Journal of Business Research*, 124, 445-457.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory*. Chicago: Aldine Press.
- Harrison, D., & Kjellberg, H. (2016). How users shape markets. *Marketing Theory*, 16(4), 445-468.
- Hoffman, D. L., Moreau, C. P., Stremersch, S., & Wedel, M. (2022). The Rise of New Technologies in Marketing: A Framework and Outlook. *Journal of Marketing*, 86(1), 1-6.
- Kaartemo, V., & Nyström, A. (2021). Emerging technology as a platform for market shaping and innovation. *Journal of Business Research*, 124, 458-468.

- Kjellberg, H., & Helgesson, C. (2007). On the nature of markets and their practices. *Marketing Theory*, 7(2), 137-162.
- Kjellberg, H., & Helgesson, C.F. (2006). Multiple versions of markets: Multiplicity and performativity in market practice. *Industrial Marketing Management*, 35(7), 839-855.
- Kjellberg, H., Azimont, F., & Reid, E. (2015). Market innovation processes: Balancing stability and change. *Industrial Marketing Management*, 44, 4-12.
- Kjellberg, H., & Murto, R. (2021). Theorizing markets. *AMS Review*, 11(3), 207-215.
- Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford: Oxford university press.
- Latour, B. (2012). *We have never been modern*. Oxford: Harvard university press.
- Leachman, L., & Scheibenreif, D. (2023). Using Technology to Create a Better Customer Experience. *Harvard Business Review*, March 17, 2023
- Lofland, J., & Lofland, L.H. (1995). *Analyzing social setting*, Nova York: Wadsworth Publishing Company.
- Ma, C., Fan, A., & Mattila, A. S. (2024). Decoding the shared pathways of consumer technology experience in hospitality and tourism: A meta-analysis. *International Journal of Hospitality Management*, 118, 103685.
- Maciel, A.F., & Fischer, E. (2020). Collaborative Market Driving: How Peer Firms Can Develop Markets Through Collective Action. *Journal of Marketing*, 84(5), 41-59.
- McCracken, G. (1988). *The long interview*. Londres: Sage.
- Nenonen, S., Fehrer, J., & Brodie, R. J. (2021). JBR special issue on market shaping and innovation. *Journal of Business Research*, 124, 236-239.
- Pels, J., Mele, C., & Spano, M. (2023). From market driving to market shaping: impact of a language shift. *Journal of Business & Industrial Marketing*, 38(1), 155-169.
- Rezende, D.C., Vivan, A.M., & De Ávila, M.L. (1999). O mercado de queijos finos no Brasil e sua relação com o comportamento estrategista das agroindústrias oligopolistas. *Revista de Economia e Sociologia Rural*, 37(2), 9-30.
- Ries, J.E. (2019) *Relatório socioeconômico da cadeia produtiva do leite no Rio Grande do Sul: 2019*. Porto Alegre: Emater/RS-Ascar.
- Saldaña, J. (2015). *The Coding Manual for Qualitative Researchers*. Londres: Sage.