

## **Examining Relationships In Retail Marketplace: A System Dynamic Model**

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### **Introdução**

Marketplace sales constitute a significant portion of online sales. The network effect and expansive reach of marketplaces act as powerful catalysts for sales, yet the dynamics of the system also introduce several risks for the marketplace, sellers and customers. This study, through a conceptual model, elucidates the relationships between companies in the retail marketplace, highlighting the key variables and impactful strategies. The application of dynamical systems methodology enables the mapping of the intricate dynamics of this complex environment.

### **Problema de Pesquisa e Objetivo**

The objective of the research is to understand which factors affect a platform-based multi-sided marketplace in the retail market, considering that it is a complex system, where business success depends on the relationships and quality of services of many firms (marketplace and sellers). How can we enable MSM growth in this complex system? For the sellers, how can they benefit from the marketplace structure, dealing with the intense internal competition? For the marketplace, how can it explore the product diversity and capillarity of the sellers, while offering a good service to customers?

### **Fundamentação Teórica**

The study presents the dynamics of the retail multi-sided marketplaces, highlighting the network effect of the platform. It also discusses the characteristics of the system dynamic methodology and the adherence of the mental model to illustrate how the parts relate to each other and the impact of the actions of one of the parts on the system as a whole. It identifies the factors that contribute (data, product diversity) or inhibit (policies, support, competition) the marketplace growth, based on previous literature.

### **Metodologia**

The research followed the dynamic systems modeling process proposed by Sterman. It started by presenting the problem articulation, developing the dynamics hypothesis of the system and creating an initial mental model. The study conducted semi-structured interviews with specialists working on marketplaces and sellers regarding the dynamics of the system. After the interviews, the final mental model (causal loop diagram) was developed. A more generic model for marketplace is proposed, supplemented by models for each involved party - marketplace, seller and customer.

### **Análise dos Resultados**

The level of agreement of the interviewees with the hypotheses presented was high, although all of them raised additional points of conflict between the parties and relevant variables in the management of the marketplace. The consolidation of the interviewee responses allowed for the identification of additional hypotheses: cost of governance, financial conflicts, NPS Control. Some factors (network effects, data sharing, product diversity) reinforce marketplace growth, and others balance it (governance, policies, financial conflicts, seller competition, customer satisfaction control, support).

### **Conclusão**

The study proposes a dynamic conceptual model that summarizes all the benefits and risks of the marketplace. In the virtual world, sales are influenced not only by price, but also by factors as reputation, delivery time, shipping costs, return policies and customer services, all of which are

essential for retaining consumers within the marketplace. The processes employed by leading companies in the offline world need to be adapted to the online environment. The substantial and growing market penetration of marketplaces sales generates a significant survival risk for small businesses.

**Referências Bibliográficas**

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