

Association for Information Systems AIS Electronic Library (AISeL)

AMCIS 1999 Proceedings

Americas Conference on Information Systems
(AMCIS)

December 1999

Realizing the Business Potential of Interoperable Electronic Catalogs - The Case of Hofer-Curti Group

David-Michael Lincke
University of St. Gallen, Switzerland

Follow this and additional works at: <http://aisel.aisnet.org/amcis1999>

Recommended Citation

Lincke, David-Michael, "Realizing the Business Potential of Interoperable Electronic Catalogs - The Case of Hofer-Curti Group" (1999). *AMCIS 1999 Proceedings*. 90.
<http://aisel.aisnet.org/amcis1999/90>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 1999 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Realizing the Business Potential of Interoperable Electronic Catalogs – The Case of Hofer-Curti Group

David-Michael Lincke

Institute for Media and Communications Management

University of St. Gallen

Müller-Friedberg-Strasse 8

CH-9000 St.Gallen

Switzerland

E-Mail: David-Michael.Lincke@unisg.ch

Abstract

In the future, a core criterion for the success of electronic marketplaces and distribution channels will be semantic interoperability among different vendors' EC systems. In this context, interoperability of product catalogs is of particular importance as it holds an enormous business potential for the transformation of sourcing processes of distributors and large organizations and can enable a wide variety of new business models in areas such as purchasing and sales operations. The case of Hofer-Curti Group, a large Swiss trade group, provides an exemplary scenario for the streamlining and optimization of supply chain activities enabled by interoperable catalog technology.

Introduction

In recent years broad availability and cheap access to open telematic infrastructures like the Internet has fueled a massive increase in the number of business transactions carried out electronically. Exploiting the radical economic advantages of the new medium in areas such as marginal cost and market reach a few small startup companies such as Amazon.com and CDnow have even outperformed the leading chains by successfully adapting traditional telephone and catalog sales models. Similar competitive advantages are now achieved in the services sector by online stock traders, insurance brokers, and travel agents. These early successes, though impressive, however barely tap the Internet's potential for transforming commerce. Sustained success of electronic marketplaces and new electronic distribution channels will depend largely on the creation of added value compared to established traditional channels. Thus, for the next generation of electronic businesses it will not suffice to merely adapt existing business models, but fundamentally new ones will have to be invented that are inconceivable without the Internet. Their focus will not be confined to selling things from a Web site but rather be on using the Internet to link buyers, sellers, and organizations in innovative ways.

It is argued that electronic marketplaces lower the buyers' cost to obtain information about the price and product features of seller offerings [1]. However, as many of today's web-based businesses merely use the Internet as a

faster and cheaper substitute for traditional means of customer interaction like telephone, fax, and paper catalogs, these benefits remain largely unrealized as buyers are still caught in the traditional bilateral model of vendor interaction. In order to find out about suitable product offerings, they continue to be required to find out about, locate and visit each vendor in turn. Moreover, buyers' task of reaching optimal purchase decisions is further complicated by the fact that a comparative analysis of product features and attributes is impeded by semantic differences between the catalogs. Thus, even though buyers enjoy broad electronic access to different vendors' product specifications and can easily retrieve product information from around the globe, integration and evaluation of product information still has to be performed manually. These impediments have considerably slowed down the adoption of the Internet as a distribution channel especially for more complex goods.

In the following sections this paper will illustrate the importance and role of interoperable catalog technology to overcome the problems outlined above. After a brief review of a number of new intermediary-based business models made possible through catalog interoperability the case of Hofer-Curti Group will be presented. Hofer-Curti Group is a large Swiss trade group which we have worked closely with in developing a scenario for the streamlining and optimization of their supply chain activities through use of interoperable catalog technology.

Catalog Interoperability

To overcome the above mentioned shortcomings in buyer-seller interaction new approaches on the technology as well as on the business side are needed. In the future, a core criterion for the success of electronic distribution channels will be interoperability among different vendors' product catalogs on a syntactic as well as a semantic level. This requires a migration away from existing proprietary and bilateral catalog systems towards open, multilateral platforms which bring together a multitude of buyers and suppliers in virtual marketplaces [cf. Fig. 1].

Over the last years, a number of approaches to electronic product catalogs have emerged that specifically try to solve the problems associated with semantic heterogeneity of

product specifications and the overhead of the bilateral model of vendor interaction [5][2][3]. What many of these interoperable catalog technologies have in common is that they employ a broker architecture which provides translation and mapping mechanisms between divergent taxonomies (ontologies, vocabularies) to enable the consistent integration of heterogeneous product databases.

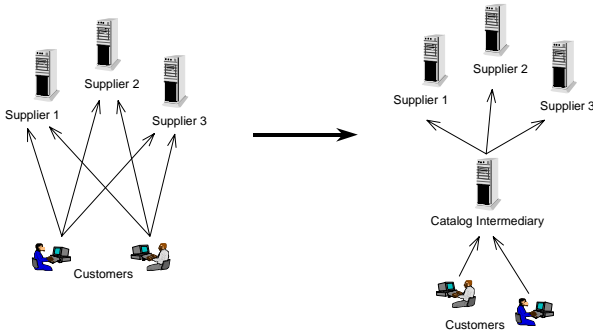


Fig. 1: Transition from closed, bilateral catalog systems towards open, multilateral marketplaces

For the application of these technologies a wide variety of business scenarios can be envisioned ranging from the support of purchasing and sales operations in the retail and business to business segment to the streamlining and optimization of sourcing processes of resellers and large organizations. Particular opportunities arise for new intermediaries, which as maintainers of such marketplaces provide a consistent taxonomy, match buyers and sellers and can engage in the provision of additional value-added services. A catalog intermediary can operate in either a cooperative or a competitive market constellation [4]. In a cooperative setting he takes a position in the value chain following the vendors whose catalogs are being integrated. Thus, the intermediary effectively creates an additional new distribution channel, which vendors can take advantage of to sell their goods and services. In a competitive setting, on the other hand, both, intermediary and catalog suppliers, are positioned at the same level in the value chain often pursuing the same kind of business. In such cases suppliers will need to stand to gain significant benefits in order to participate in such a service. From the different market configurations and possible roles of market participants three distinct generic types of business models for the implementation of catalog intermediary services can be derived (for an in-depth analysis see [4]):

- **Vertical Integration.** Catalog mediation services which integrate different suppliers catalogs of homogeneous product types thereby vastly expanding customers' search scope and allowing for automated comparisons of product attributes and costs
- **Horizontal Integration.** Mediating catalogs which incorporate different suppliers' catalogs covering various kinds of product families
- **Cross Integration.** Mediating catalogs which integrate different suppliers' catalogs covering various kinds of

complementary product types enabling new kinds of virtual enterprises that flexibly make use of other companies' goods and services to deliver customized solutions to specific buyer needs.

While in the model of vertical integration it might be profitable for an intermediary to restrict itself to a role as a pure information broker, the other two models favor intermediaries acting as market brokers.

Scenario: Hofer-Curti Group

Hofer-Curti Group is a large Swiss trade group operating a number of grocery store chains in Switzerland. In addition it is engaged in catering services and runs a wholesale business serving the procurement needs of restaurants and hotels. Each of the various grocery store chains such as Pick Pay, USEGO, etc. carries a specifically composed product assortment serving the needs of distinct customer segments with differing demographic characteristics.

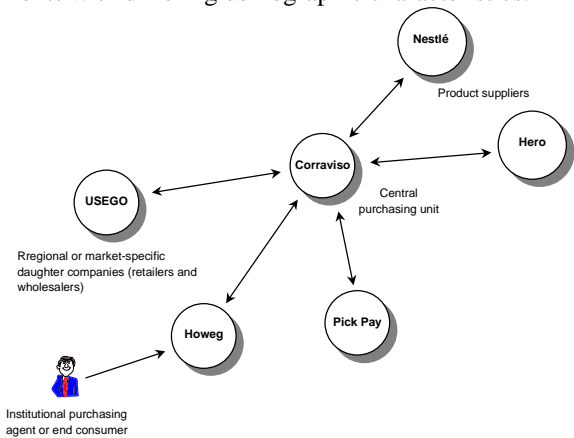


Fig. 2: Flow of product information and goods among selected business units of Hofer-Curti Group

In order to achieve economies of scale procurement of goods for all daughter companies is carried out by Corraviso, a central purchasing unit, which is in charge of all supplier relations and manages an inventory list of well above two hundred thousand articles. A central task of Corraviso is to select an optimal mix of products for the various daughter companies according to the demographics of their respective target customer segments. Traditionally, this means obtaining printed paper catalogs, or electronic catalogs where available, from a large number of vendors, manually sifting through vast amounts of product information and investing huge efforts in manual comparison of different vendors' offerings in order to reach well informed purchase decisions. While product information from a lot of manufacturers is available electronically through product data exchanges based on EANCOM (an EDI transaction set specifically designed for the purposes of European retailers), these are used primarily as a EAN (UPC) exchange vehicle between manufacturers and retailers and are lacking the necessary breadth of information to be of much use beyond actual order processing.

For these reasons reevaluations of purchasing agreements are only performed at long intervals of up to a year or when an especially obvious opportunity presents itself such as a trade show. The use of interoperable catalog technology in the product evaluation process at Corraviso can alleviate much of this effort by enabling the semantic integration of various suppliers' and manufacturers' product catalogs. Automated product comparisons based on relevant product attributes can then be conducted on the resulting virtual catalog. By establishing such an integration service for its own use, Hofer-Curti takes on both the roles of a catalog intermediary and its customer. Being one of the largest purchasing organizations in Switzerland it should also be able to leverage its market power to persuade its suppliers to execute the necessary technical investments on their side. Eventually, the use of interoperable catalog technology should enable Hofer-Curti companies to react faster to new developments in supplier markets as well as shifts in customer buying patterns by immediately adjusting their product selection.

Another challenge for Corraviso is the enormous cost that the maintenance of its central electronic product catalog entails. In keeping the catalog up to date, a lot of effort is duplicated that is already performed by manufacturers and suppliers in building their own catalogs as product descriptions are manually reentered and reformatted. Designing the central product catalog as a virtual multi-vendor catalog with links to each supplier's catalog would allow to automate the inclusion of relevant product descriptions into the catalog and further customizations (such as considering special pricing arrangements and batch size agreements, reformatting entries, etc.) to a large extent thus resulting in significant savings. By making this a dynamic process, updates in manufacturer catalogs will automatically propagate to the central purchasing catalog. Moreover, this model can be further extended to those daughter companies that are in the wholesale business and also sell through the Web (such as Howeg), thus effectively deploying a multi-level catalog integration service. Traditionally, extraction of product data from Corraviso's central purchasing catalog and preparation for inclusion in the Howeg sales catalog has been a laborious and costly process. Using interoperable catalog technology instead will allow to hook up the sales catalog directly to the purchasing catalog thus automating the major steps of catalog maintenance. As Howeg operates in all three language regions of Switzerland it needs to have its catalog available in different language versions. As interoperable catalog technologies employ ontology mapping techniques to achieve semantic interoperability a considerable amount of the translation work normally required can be automated simply by having the catalog switch ontologies.

At first glance it may seem as if manufacturers and suppliers of Hofer-Curti have only stand to lose in this scenario as they will have to bear their share of the system setup costs and will immediately get to feel the consequences of increased market transparency in the form of thinner mar-

gins and increased competition. However, more frequent adjustments in product selection on the part of large customers like Hofer-Curti will eventually allow them to establish new products in the channel more quickly. In turn they will benefit from shorter write-off cycles for their product development costs. Also, once such a tight integration has been established between Hofer-Curti Group and its suppliers at the catalog level, pressure will rise for suppliers to extend electronic integration to the settlement phase enabling additional efficiency gains through EDI links and continuous replenishment arrangements. While this may also benefit suppliers to some extent by guaranteeing them a long-term supplier arrangement it of course also holds the danger of increased dependency and price pressure.

Conclusions

The scenario presented above that was developed together with representatives from several business units within Hofer-Curti illustrates a case of multi-level catalog integration throughout the entire group. It combines aspects of both the model of vertical integration and the model of horizontal integration at different stages in the supply chain. Additionally, in this case the company making use of the catalog intermediary service itself is the intermediary providing that service.

In general, the introduction of interoperable electronic product catalogs into the value chain can bring about substantial benefits to market players at all levels of the value chain. On the customer side the introduction of intermediaries into the usage process of electronic product catalogs offers significant added value to end users. On the sides of vendors and catalog intermediaries new business opportunities are arising and new business models become viable.

Acknowledgements

The ideas developed in this paper are based on research carried out by the Business Media and Knowledge Media Groups at the Institute for Media and Communications Management at the University of St. Gallen.

References

- [1] Bakos, Yannis: Reducing buyer search costs: Implications for electronic marketplaces. In: *Management Science*, Vol. 43, No. 12, 1997.
- [2] CommerceNet: Catalog Interoperability Study. CommerceNet Research Report #98-05, April 1998.
- [3] Keller, A. M.: Smart Catalogs and Virtual Catalogs. In: Kalakota, R.; Whinston, A. (Eds.): *Readings in Electronic Commerce*, Addison-Wesley, 1997.
- [4] Lincke, D.-M.: Business Models for the Implementation of Mediating Electronic Product Catalogs. In: *Proceedings of the Association for Information Systems 1998 Americas Conference (AIS '98)*, Baltimore, August 1998.
- [5] Lincke, D.-M.; Schmid, B.: Mediating Electronic Product Catalogs. In: *Communications of the ACM*, Vol. 41, No. 7, July 1998.