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COLLABORATION IN THE CONSUMER PRODUCT GOODS INDUSTRY – ANALYSIS OF MARKETPLACES

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ABSTRACT

Electronic cooperation or collaboration has a long tradition in the supply chain of consumer product goods (CPG). During the eBusiness evolution established initiatives, such as category management or efficient consumer response (ECR) were complemented by a variety of electronic marketplaces. As infrastructures which support business transactions among the organizations involved in a value chain, marketplaces address an important need within the CPG industry, namely efficient collaboration among CPG companies and retailers in the retail supply chain. To discover whether the emerging CPG marketplaces can serve as collaboration infrastructures in the CPG industry a set of 31 electronic marketplaces has been analysed. For the evaluation a model was elaborated that uses the five criteria marketplace positioning, revenue model, transaction services, business process support and the use of IT and standards. The result shows that most marketplaces focus on providing catalog, auction and exchange functionality but neglect the execution of business transactions. We conclude that only marketplaces which also support the established processes in the CPG industry will be sustainable.

1 INTRODUCTION

1.1 Collaboration in the Consumer Product Goods Industry (CPG)

Electronic cooperation (collaboration) in the consumer product goods (CPG) and retail industry is not new. First initiatives such as category management, or efficient consumer response (ECR) have already been established in the 1980s in order to establish coordinated processes and communications between a retailer and his preferred suppliers (cf. [cf. Hogarth-Scott 1999, 670 et. seq.], [cf. Mitchell 2001, 72]). Among the enabling technologies were barcodes, scanners, computer-aided ordering or electronic data interchange (EDI) [cf. Kurnia 2000, 373]. Besides these supply chain initiatives online groceries started to appear within the 1980s. Videotext systems (e.g. France's Minitel, Germany's Btx) and the Internet have been technological enablers on the consumer side. During the eBusiness hype a variety of online grocers has emerged, such as Peapod, Webvan, Grocer online, ShopLink or LeShop [cf. Spieler 2000]. Eventually, established retailers such as Royal Ahold, Tesco, Safeway, Walmart, Karstadt or Migros have also started online ventures. Not all of these approaches have been successful. Only for a minority of online ventures profits are reported [cf. Reinhardt 2001] and many eGrocers have disappeared. For example, market leader Webvan went out of business in July 2001 despite investments totaling USD 1.2 billion due to high investments in distribution and logistics facilities. From this point of view click and mortar strategies where electronic channels complement and leverage existing competencies in warehousing and distribution seem to be more promising on the consumer side.

Many activities from large CPG companies (e.g. Nestlé, Kraft, Unilever, Procter&Gamble) have also launched solutions to improve their interaction with retailers (e.g. replenishment, category management, procurement consolidation). Besides bilateral (EDI) relationships with large retailers 1:n solutions have emerged to integrate small and medium-sized retailers. For example, Kraft Plus eServ provides services such as merchandising information, co-marketing information, supply chain and category management services to a large number of retailers. Sainsbury established its SID (Sainsbury Information Direct) portal in 1998 for its over 4,000 suppliers to exchange data about promotion planning, goods receipt, or goods availability. In addition, many (electronic) marketplaces have emerged in the past 2-3 years, e.g. GlobalNetXChange (GNX), Transora, Worldwide Retail Exchange (WWRE) etc. Due to their multilateral nature, these platforms have also been referred to as marketplaces. As classical infrastructures which support the exchange of products between buyers and suppliers, these initiatives could have the potential to become collaboration infrastructures which link multiple actors in a CPG supply chain. This could be as critical for the sustainability of CPG supply chain initiatives as the click and mortar approach was on the consumer side. To explore the potentials of marketplaces to evolve to collaboration infrastructures a set of 31 marketplaces has been analyzed.

1.2 Marketplaces and Collaboration Infrastructures

A review of the relevant literature reveals a close relationship between a marketplace and a collaboration infrastructure. Marketplaces are defined as governance mechanisms based on information technology [cf. Malone 1987], as the classical, micro-economical "market maker", who creates and maintains a market (cf. [Bakos 1997], [Spulber 1999]), or as "commerce sites on the public Internet that allow large communities of buyers and suppliers to meet and trade with each other" [Ariba 2000, 2]. Hence, marketplaces can be regarded as institutions which provide an infrastructure (e.g. exchange floor, auctioneer, clearing mechanisms) for the exchange of products and services among multiple buyers and suppliers. The main economic characteristics are reduced searching and switching costs, network externalities, and an increase of buyer power [cf. Bakos 1991, 297]. The marketplace system can be hosted by either the buyer or the seller as well as by an intermediary [Segev et al. 1999].

The term "collaboration infrastructure" refers to a platform that provides m:n-capable efficient cooperation processes based on standardized trade agreements, applications, data, and information technology available to the participants [cf. Fleisch 2001]. Collaboration is a widely used term in literature (cf. [Prahalad/Ramaswamy 2001], [Kafka et al. 2001, 6], [Wigand et al. 1997], [Österle et al. 2001, 2]) and denotes the electronic cooperation between business partners with a significant frequency and/or depth of interaction. The execution of collaboration processes requires an electronic information infrastructure which links the relevant partners. There are multiple solutions for these infrastructures, e.g. an integrated ERP-system that links multiple organizational units in a large company, a supply chain system that links major business partners (e.g. Dell, Cisco) or electronic marketplaces that emerged in many industries, such as Covisint in the automotive sector or the CPG markets analyzed below. From a technological point of view collaboration infrastructures may consist of bilateral system links, hub and spoke architectures based on adapters (e.g. marketplace and EAI-architectures) and of WebService architectures.

1.3 Focus and Organization of Paper

This paper will present an analysis of existing marketplace initiatives in the CPG industry. The goal is to find out about the functionality and the development of these initiatives. We will mirror the current status against the vision of a collaboration infrastructure which is expected to emerge for improved supply chain collaboration in the CPG industry.

In chapter 2 a model for analyzing the existing marketplaces in the CPG industry will be elaborated based on relevant literature. This model will be used in chapter 3 to evaluate the 31 marketplaces that have been subject to our research. A summary and outlook will be presented in chapter 4.

2 MARKETPLACE EVALUATION MODEL

Within literature, there are various approaches to evaluate and characterize marketplaces (c.f. [Weill/Vitale 2001, 57], [Cho 2001], [Dai 2001], [Kaplan/Sawhney 2000], [Segev et al. 1999], [Raisch 2001, 4], [Bakos 1998]). Since each covers a certain marketplace aspect we combined characteristics, such as marketplace positioning, revenue model or transaction services. Due to our focus on business processes the model also emphasizes business process support and the deployment of IT and standards.

2.1 Marketplace Positioning

In providing infrastructures where buyers meet suppliers, marketplaces support the exchange of products. Marketplaces differ in various dimensions which leads to different business models, e.g. commodity markets, catalog markets, MRO markets, horizontal and vertical markets. Four structural criteria have been use to identify the positioning of a marketplace (cf. [Kollmann 2001, 40-48, 82-85], [Kaplan/Sawhney 2000]):

- *Homogeneity*. In homogeneous marketplaces customers consider all offered goods to be functionally equivalent. If in addition to the price, other characteristics (e.g. color, consistency, manufacturing quality, etc.) are needed to describe the product, multi-dimensional decision parameters and heterogeneous markets exist.
- *Openness*. Open marketplaces are generally accessible to all participants, i.e. no market entry or exit barriers exist as in the case of a closed marketplace.
- *Focus.* Horizontal marketplaces such as AtradaPro or TPN Register are cross-industry platforms, specialized in certain products (C parts and MRO goods) as well as individual processes within the value chain such as MRO procurement, project management, etc. Vertical marketplaces such

as Plastics.net or e-Steel concentrate on certain industries and sectors and offer tailored solutions which comprise the entire industry value chain. They are not limited to certain product groups.

- *Products.* The differentiation between direct and indirect goods has emerged as an important aspect of product differentiation [for more details see Bakos 1991, 300]. Direct goods are part of a company's main business and are resold. Indirect goods and goods for maintenance, repair and operations (MRO) are used within companies to support the production of direct products (or services). [Dolmetsch 2001] distinguishes indirect goods in the administrative area (e.g. office material, PCs, etc.) and MRO goods for machines and products (e.g. tools).

2.2 Revenue Models

Since marketplaces are also profit-oriented companies as well, the revenue model is important for economic sustainability. Of course, the revenues that can be generated are closely linked to the business model of the marketplace [cf. Raisch 2001, 186] and its competitive advantage (USP). Possible sources of revenue are (cf. [Kollmann 2001, 127], [Sculley/Woods 1999, 99-108]):

- *Membership Fees.* Fees for the general right to participate in the marketplace for a certain period of time (e.g. per month).

- *Usage Fees.* Fees for additional services can be divided into availability fees, e.g. for databases, and processing fees, e.g. for using information services.

- *Transaction Fees.* In case of a successful coordination of supply and demand, a commission in the form of a percentage of the sales price or the cost savings can be charged.

- *Posting Fee.* Fee for placing the offer / the demand.

- *Advertising Revenue.* Fee for placing banners, listings in yellow pages, etc.

- *Permission Marketing Fees.* Also called opt-in e-mail marketing, the customer may be charged a lower membership fee, if he subscribes to personalized advertising e-mails.

- *Participation in sales generated turnover through the use of services.* If the marketplace offers its users additional external services such as e.g. news, market analyses, etc., as part of strategic partnerships, it can be paid – instead of a fee – a certain percentage of turnover.

- *Software Licensing.* If the marketplace has developed its own platform, this software may be offered to other marketplaces.

2.3 Transaction Services

In addition to providing infrastructure, marketplaces focus on settling supply and demand. This allocation process may be static through catalogs or dynamic through exchanges and auctions (cf. [Raisch 2001, 134-138], [Kollmann 2001, 86-89]):

- *Catalogs*. Based on a multi-vendor catalog which is created from the catalogs of several suppliers, catalog marketplaces provide high transparency on products, prices, conditions, and qualities across several suppliers. Typically, catalogs are based on fixed prices.

- *Exchanges*. Suppliers and buyers announce their intent to purchase and to sell (including price, amount, product characteristics) in the marketplace. Potential buyers and sellers normally post their offers to the marketplace provider, who puts them into an electronic order book or forwards

them anonymously (if necessary after an examination „Request for Proposal“ – RFP). The initiator may accept or refuse the offer. A variant of the exchange method is the market maker model where seller and buyers do not meet directly [cf. Kollmann 2001, 87].

- *Auctions*. Using an open pricing mechanism bids and offers affect each other reciprocally. During a traditional auction („English Auction“), the price is raised and the auction ends either after a predetermined time period or when no higher bid is made. The opposite auction („Reverse Auction“) consists of decreasing prices, i.e. a buyer specifies his offer and potential sellers underbid each other. The auction ends after a fixed time or if the lowest prices has been reached.

While catalogs are suitable for heterogeneous products with multi-dimensional decision criteria, allocation in exchanges and auctions occurs only on price. All other parameters such as condition, amount, quality need to be completely specified.

2.4 Business Process Support

Business networks consist of a set of business processes. Based on the generic processes as defined in the frameworks from Rosettanet and CPFR (see chap. 2.5) six collaborative processes have been used to evaluate the business process support of marketplaces. As shown in Fig. 2-1 these processes are executed on a collaboration infrastructure. The six collaborative processes are [cf. Fleisch/Österle 2001, 21]:

- *Content & Community* comprises the interorganizational planning process of advertising measures (campaign management), the collection, negotiation, and optimization of customer and partner data (partner profiling), the exchange and management of the key performance indicators for optimizing the supply chain (performance management), and interorganizational market research.
- *Product Life Cycle* comprises the interorganizational development (engineering) and refinement of goods and services (product life cycle management).
- *Commerce* comprises the sharing of product and service information in the supply chain (catalog/content management), negotiations regarding goods, prices, and warranty specifications (negotiation), and the analysis of procurement, supplier search and selection (strategic sourcing).
- *Supply Chain* comprises the interorganizational coordination of demand and availability (supply and demand planning), dividing/allocating and planning production lots, resources, etc. (production planning), order processing up to shipping (order fulfillment), as well as the common planning and completion of the transporting process (logistics).
- *Maintenance & Repair* comprises all interorganizational activities relating to warranty and repair services (after sales) as well as the joint processing and solving of customer problems regarding products and services (problem handling).
- *Finance Chain* comprises the interorganizational settlement (payment), financing (finance), accounting (accounting), compensation (equity linked compensation), as well as infrastructure administration (equipment/infrastructure management).

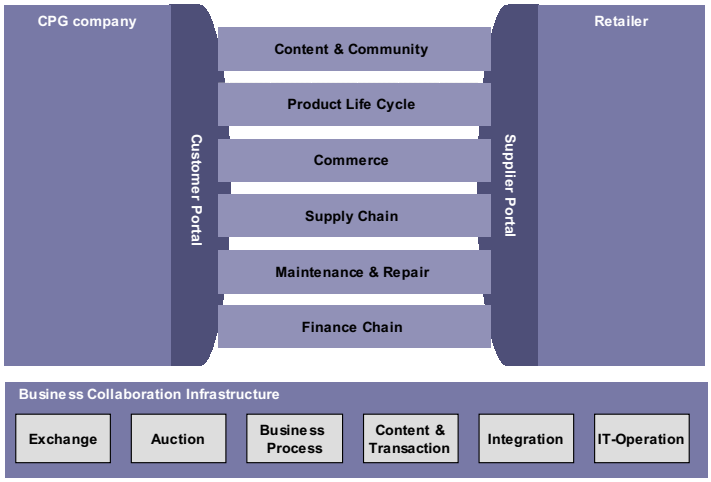

Fig. 2-1: Collaborative Processes in Business Networks

2.5 Deployment of IT and Standards

On the information systems level, an efficient implementation of collaborative processes implies the integration of different applications. For example a collaborative planning application requires real-time ERP-integration. Since integration costs are largely a function of the availability of broadly accepted standards, the support of these standards is critical for marketplaces. Five initiatives that aim at standardizing process and data standards in the CPG industry are important:

- *Collaborative Planning, Forecasting, and Replenishment (CPFR)* focuses on the joint execution of processes and the exchange of information between suppliers, manufacturers, and retailers. The efforts are closely linked to previous endeavors within the CPG industry such as ECR, quick response (QR), or vendor managed inventory (VMI).
- *Open Applications Group Integration Specification (OAGIS)* is in addition to ebXML and CommerceNet (RosettaNet, Open Buying on the Internet (OBI), eCo-Framework) the most frequently used and supported XML standard for eBusiness and application integration in various industries.
- EAN-International developed *EAN-UCC (Uniform Code Council)*, a series of standards that mainly serve to identify products and services (e.g. EAN-13 bar code, global trade item number (GTIN), serial shipping container code (SSCC), or global location number (GLN)).
- A non-profit subsidiary of the UCC, *UCCnet*, focuses on establishing a global standard for article information for the food and clothing industries by the end of 2002. This standard uses the global trade item number (GTIN) for individual products, the GLN for business locations, and the global partner profile (GPP) for the efficiency of business partners.
- *Global Commerce Initiative (GCI)* is a consortium of several manufacturer, dealer and industry associations which aims at designing standards for the supply chain collaboration of CPG companies based on already existing process and data standards.[1]

[1] GCI members are manufacturer/dealer organizations such as European Brands Association (AIM), Food Business Forum (CIES), Grocery Manufacturers of America (GMA), or Food Marketing Institute (FMI), organizations such as the Voluntary Inter-industry Commerce Standards Association (VICS), and general standardization committees such as EAN-International and the UCC.
See http://www. globalcommerceinitiative.org.

3 ANALYSIS OF CPG MARKETPLACES

3.1 Research Methodology

A total of 31 electronic marketplaces were analyzed and evaluated according to the model described in chapter 2. Based on literature and Internet research the marketplaces were selected which were used in the CPG industry and which could document an active operation for the entire period of analysis (between May and August 2001). Initiatives that were discontinued during the study (e.g. egarden.com, HotOffTheWire.com) were removed from the survey. Information on the marketplaces was obtained mainly from the provider homepages. To support and deepen these findings questionnaires were sent out to all selected marketplaces. Since only four of the 31 questionnaires were returned, four personal interviews were conducted with marketplace providers.

3.2 Marketplace Positioning

Regarding their positioning the CPG marketplaces paint a homogeneous image. All marketplaces support heterogeneous products, open access, vertical markets and in most cases the exchange of direct and indirect products:

- *Homogeneity*. Multi-dimensional decision making and the exchange of heterogeneous products could be observed in all marketplaces. Quantity, quality, condition, price and other criteria could be specified in all systems.
- *Openness*. All marketplaces were openly accessible without entry or exit barriers. Only WWRE required an annual sales volume of at least USD one billion from participating CPG enterprises – no limitations existed for suppliers, however.
- *Focus.* Due to our focus on CPG marketplaces all initiatives were classified as vertical. 22 marketplaces provided functionality for both direct and indirect/MRO goods, whereas nine marketplaces focused on direct goods (e.g., textiles for resale, ingredients for food preparation, etc.). The vertical CPG focus seems to exclude horizontal markets with indirect goods only.

3.3 Revenue Models

Concerning their revenue model, 15 marketplaces did not charge any apparent fees for the participants. In ten cases, the placement of banners led to the conclusion that part of the revenue were based on advertising. Other elements of the models described in chapter 2.2 were not observed.

Of the remaining 16 marketplaces, 30% of the fees raised could be attributed to membership and usage fees and an additional 40% to transaction fees in each case. Only two marketplaces charged mere membership fees with fees ranging from USD 10 per month to USD 100,000 per year. Three were financed through usage fees and five through transaction fees only. Transaction fees constituted a percentage of the value of the traded goods and ranged between 2 and 4.5 %.

The remaining six marketplaces charged a combination of fees. Three used membership and transaction fees. In the case of ecFood, the membership fee amounted to USD 50,000 and the per-transaction fee to USD 10,000. Another two marketplaces were financed through membership and usage fees. One marketplace left it to the participants to choose whether to pay either a lump-sum membership fee or an individual usage fee. The remaining marketplace used all three revenue models.

3.4 Transaction Services

The analysis of transaction services was limited to 29 marketplaces, since no information was available for two marketplaces. A total of 20 marketplaces only used catalogs which were made available on a generic and personalized basis. The rather smaller marketplaces, such as Buyingsources, provided direct and indirect/MRO products which supported online and offline ordering. This process is similar to the transaction services at e.g. Amazon.com. Bigger marketplaces, such as Transora or WWRE, offered catalog functionality as a means to standardize product and item information. Transora's catalog contained more than 16,000 items which have been categorized according to UCC/EAN standards. CPG companies, such as Procter & Gamble, Recleitt Benckiser or Kraft Foods used this catalog as a central repository of images and item attributes and publish the data to their retailers [cf. Transora 2002]. WWRE also used the centralized catalog for data synchronization and automated feed into the back-end systems of their participants

Nine marketplaces offered dynamic pricing functionality. In five cases, auctions were used in addition to a catalog and one marketplace provided exchanges in combination with catalogs. In two cases, both auctions and exchanges were used and one marketplace used all three mechanisms. In four cases only direct goods are traded dynamically whereas in the other five cases both direct and indirect/MRO goods are traded. Auctions were used for both strategic and operational procurement. For example, CPGMarket's eSourcing allowed strategic procurement bidding for contracts [CPGMarket 2002]. At WWRE, auctions were used for selling goods in 75% of all online negotiation activity. With more than 2,600 transactions in 2001 the value of the transaction volume exceeded USD 2 billion. One large participant, Pinault-Printemps-Redoute, plans to purchase USD 490 million in 2002 and to achieve an average of 10% in cost savings [GlobalNetXChange 2002].

3.5 Business Process Support

Regarding the six collaborative processes all marketplaces supported the commerce process and more than half the content & community process. Six marketplaces supported supply chain, three product life cycle, and two finance chain processes. The maintenance & repair process was not supported by any of the marketplaces. Ten marketplaces which provided one collaborative process concentrated on the commerce process. Of the 13 that supported two macro processes, 11 were limited to the processes commerce and content & community. Seven were able to support three macro processes. Five of them concentrated on the processes commerce, content & community, and supply chain. Only one marketplace supported four collaborative processes.

As described in chapter 2.4 each collaborative process consists of several subprocesses. An analysis of these subprocesses paints a more detailed picture. Except for one marketplace, all supported the catalog/content management processes, i.e. the sharing of product and service information upstream and downstream the supply chain. The second most frequently supported process (18 marketplaces) was negotiation regarding goods, prices, and warranty specifications. With 14 times the third most frequently supported subprocess partner profiling belongs to the collaboration process content & community, which ranked second among the supported collaborative processes. Next in line with six times was the subprocess strategic sourcing that also belongs to the most frequently supported collaborative process commerce. The subprocesses supply and demand planning and market research were supported in four cases and are part of the collaborative processes supply chain and content & community.

The analysis shows a clear correlation between the transaction services and the supported collaborative processes. In those cases where only the commerce process was supported, the catalog method was used. Marketplaces that supported multiple collaborative processes also provided dynamic transaction services and the choice between several transaction services.

3.6 Deployment of IT and Standards

Regarding IT applications and standards the applications underlying the marketplaces have been analyzed. The software used was named explicitly only in a few cases, but based on the supported processes conclusions regarding the IT could be drawn. Due to lacking information and/or the lack of comprehensive functionality – 17 marketplaces made only a notice board or a product catalog available for contacting buyers and sellers with all other settlement processes taking place offline – it can be concluded that the majority of the marketplaces did not employ applications such as CRM or SCM systems. In 24 cases only databases or proprietary systems have been used which did not allow back-end integration. The same is true for the 17 cases, where settlement occurred completely offline and/or without using the marketplace as an intermediary. The analysis shows that only seven marketplaces offered back-end integration facilities:

- *CPGMarket* used the mySAP.com workplace for integrating processes into the participant`s ERP systems.
- *Transora* combined Ariba's products Marketplace, Dynamic Trade, Sourcing, and Commerce Services Network with i2's products Content and Trade Matrix Platform. It used Syncra's product Xt for supporting supply chain processes (e.g. exchange of forecasts and promotion plans) based on CPFR standards. Product and order data were based on the EAN-UCC system in XML format.
- *The GNX platform* was based on Sun Microsystems hardware and on Oracle Exchange software, which permitted data transfer in EDI and XML format. GNX used OAGIS as an XML standard for presenting orders, order confirmation, advance delivery notifications, and invoices. The supply chain tool from Manugistics Networks was implemented for real-time planning, an exchange of joint demand forecasts, sales-supporting events, and sales and performance data based on CPFR.
- *WWRE* chose IBM as its system integrator and hosting provider. Ariba's B2B Commerce Platform and i2's TradeMatrix were used for supporting supply chain functionality according to CPFR standards. ViaLink's service syncLink was used for synchronizing product, price, and promotion information and data, which made data available in a central database based on UCC`s UPC. In addition to syncLink, WWRE had realized a link to QRS's Keystone product information database, which permitted data formats such as UPC or EAN and enabled the import and export of the information via EDI or XML. Retek's Design Collaboration Solution was used for implementing collaborative product engineering.

Table 3-1 summarizes the findings from the analysis of the 31 marketplaces using the criteria of the evaluation model described in chapter 3.

Marketplace Positioning		
Homogeneity	Homogeneous: 0	Heterogeneous: 31
Decision Parameters	One-dimensional: 0	Multi-dimensional: 31
Openness	Open: 30	Closed: 1
Focus	Horizontal: 0	Vertical: 31
Products	- Direct only: 9 - indirect only: 0	Direct & indirect goods: 22
Revenue Model		
No Fees	15 Marketplaces	
Advertising	10 Marketplaces	
Membership Fees	7 Marketplaces	
Usage Fees	7 Marketplaces	
Transaction Fees	9 Marketplaces	
Transaction Services		
Catalog	27 Marketplaces	
Auction	8 Marketplaces	
Exchange	4 Marketplaces	
Business Process Support		
Content & Community	Campaign Management	1 Marketplace
	Partner Profiling	14 Marketplaces
	Performance Management	2 Marketplaces
	Market Research	4 Marketplaces
Product Life Cycle	Engineering	2 Marketplaces
	Product Life Cycle Management	2 Marketplaces
Commerce	Catalog / Content Management	30 Marketplaces
	Negotiation	18 Marketplaces
	Strategic Sourcing	6 Marketplaces
Supply Chain	Supply & Demand Planning	4 Marketplaces
	Order Fulfillment	2 Marketplaces
	Logistics	0 Marketplace
Maintenance & Repair	After Sales / Problem Handling	0 Marketplace
Finance	Payment	2 Marketplaces
Deployment of IT & Standards		
No back-end Integration	24 Marketplaces	
Back-end Integration	7 Marketplaces	

Table 3-1: Summary of findings

4 CONCLUSIONS AND FUTURE RESEARCH

The goal of the article was to analyze a set of emerging CPG marketplaces to explore their role as collaboration infrastructure for CPG supply chains. The marketplaces were categorized according to a presented model which consisted of the five criteria market positioning, revenue model, transaction services, business process support and IT and standards. Our findings are:

1. Although marketplaces have been initiated by CPG companies (e.g. CPGMarket, Transora, RetailersMarketXchange), large retailers (e.g. GNX, WWRE) and investments companies (e.g. Alibaba, EcFood) the marketplaces are similarly positioned.
2. The marketplaces differed considerably in their revenue models. Since transaction pricing requires a significant transaction volume only a small number of these markets will be able to survive. Most of these marketplaces have either ceased operation or changed their revenue model towards fixed price models, which foresee charging for additional services, etc. Many CPG marketplaces already offered mixed pricing models.
3. Marketplaces mainly focused on providing electronic catalogs and offered simple auction and exchange functionality. Only the four marketplaces ('The Big Four'), CPGMarket, Transora,

GNX, and WWRE provided comprehensive services beyond the commerce process (e.g. content & community and supply chain processes). These marketplaces also supported the most subprocesses.

4. Only a minority of marketplaces provided facilities for back-end integration. In particular, the support of relevant standards such as CFPR and EAN or UCC on the basis of XML messages was regarded as important for business partner integration.

During our analysis four marketplaces were discontinued and a consolidation and restructuring phase is expected for marketplaces [cf. Skinner 1999, 55]. In summary, the large marketplaces seem to be better positioned to become a collaboration infrastructure in the CPG industry. This is based on the savings and the critical mass which determine a marketplace's attractiveness [cf. Porter 2001, 70]:

- *Savings through integrated processes*. In the first place, the large marketplaces not only cover a small function in the processes between CPG company and retailer (e.g. auctioning, catalog ordering). They aim at supporting multiple subprocesses within a collaborative process (e.g. commerce) as well as other related collaborative processes. Regarding the execution of business transactions, functionality for the supply chain process increases the benefit of integrated processes. Improved supply and demand planning and order fulfillment are able to increase product availability to a level of 97-99 %, to raise planning accuracy by 50-80 % and sales by 5-7 %, and lead to inventory reductions by 20-80 % [cf. Bruun-Jensen 2000].
- *Critical mass through process coverage*. The sustainability of marketplaces largely depends on their ability to attain critical mass. Besides political and organizational factors which have not been discussed in this paper, process benefits are major factors for marketplace adoption. Retailers are more inclined to join a marketplace which offers a good support of their processes. Compared to marketplaces which support multiple collaborative processes, catalog-based marketplaces provide only a narrow process coverage.

Figure 4-1 shows Transora as an example for a large marketplace. The marketplace supports the collaborative processes commerce and supply chain between retailers and CPG companies and offers three services which are centrally made available: CPFR, procurement and auction. For example, CPFR enables a tracking of information along the entire supply chain for products that have been ordered via data catalogs or auctions [cf. Syncra 2001, 7]. To increase critical mass and process coverage marketplaces are also starting partnerships. For example, GNX cooperates with TradingProduce.com and WWRE with Agribuys. In analogy to the financial markets, Transora and GNX linked their systems to enable transactions between participants of both marketplaces.

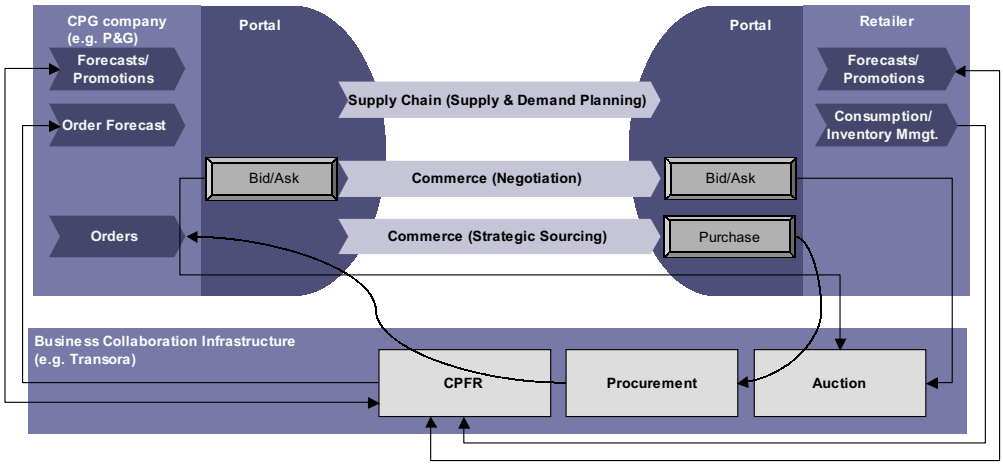

Fig. 4-1: Process Support of a CPG Marketplace

The results represent a snapshot on the existing functionality of major CPG marketplaces. Further research is needed concerning the usage of CPFR and the link of multiple collaborative processes. Especially the 'Big Four' marketplaces will have to be analyzed in greater detail. A second research area are the requirements from a participant's perspective. This refers to the functionality that CPG companies currently use in their processes and the potentials they intend to realize in future. On the technological side, the ability of marketplaces to support and implement standards, especially process standards such as CPFR, will become an important issue.

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APPENDIX: OVERVIEW OF ANALYZED MARKETPLACES

Analyzed Marketplaces	Owners / Investors
Alibaba.com	Alibaba.com E-Commerce Corp *Investors:* Softbank, Goldman Sachs, Transpac Capital, Fidelity Capital, Venture TDF, Pte Ltd (Singapur) and Investor AB (Sweden)
Asiabus	Asia Business Web Co Ltd
Baltic Business Bulletin Board	Internet Club
BigEx.com	Abeena
BiztoBiz	BiztoBiz Co Ltd
Buyingsources	Buying Sources Group
Cerespan	Cerespan.com
ChinaMallUSA	ChinaMallUSA.com
CPGMarket	CPGmarket.com *Founders:* Danone, Henkel, Nestlé, SAPMarkets
ebizmix.com	Mix Inc
EcFood	ecIndustries Inc *Investors:* Redleaf Group., Swander Pace Capital
Extrade	World Trade Promotion Corporation
Funeral Exchange	iUndertake Inc
GlobalNetXChange	GlobalNetXchange LLC *Investors:* Carrefour, Coles Myer, Karstadt Quelle, Kroger Co, Metro, Pinault-Printemps-Redoute, Sainsbury, Sears, Roebuck
Hongkong Enterprise Internet	Hong Kong Trade Development Council
Hongkong Sources	Global Sources Group
Ingredientsnet.com	Ingredientsnet.com *Investors:* Fyffes PLC, Glabia PLC
LinkApparel	Creatnet Services Ltd
MeetWorldTrade	Meet World Trade
OnChina	USM Telecommunications
Polygon.net	Polygon.net
RedTagBiz	RedTagBiz
RetailersMarket Xchange	RetailersMarketXchange *Investors:* Chevron, McLane, Oracle, Philip Morris
Sparkice	Sparkice.com Inc
SSR Holland	FIWI SA
TDC-Link	Hong Kong Trade Development Council
Thaipost	Thaipost.com
Tradematch	Information Providers Ltd
Transora	Transora Inc *Investors:* e.g. British American Tobacco, Coca-Cola, Colgate-Palmolive, Danone Foods, General Mills, H.J. Heinz, Heineken International, Kellogg, Kraft Foods, Nestlé Holdings, PepsiCo, Sara Lee Corporation, Gillette Company, Procter & Gamble, Unilever
Worldbid	Worldbid Corporation
WorldWideRetailExchange	WorldWide Retail Exchange LLC *Founders:* Albertson's, Auchan, Best Buy, Casino, CVS, Delhaize, J.C.Penney, Jusco, Kingfisher, K-Mart, Marks & Spencer, Royal Ahold, Safeway, Target, Tesco, Walgreens