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B2B EXCHANGES – OPPORTUNITY FOR PURCHASING PROCESS?

1. Introduction

Traditional purchasing process seems to be neither suitable nor effective, in most large production enterprises supplied materials and services can participate 55-75% of all costs [3]. Therefore enterprises have been looking for the solutions to decrease purchasing costs and enlarge the profit margin of their products, in effect. Participating in Business-to-Business (B2B) exchanges can be one of the solution.

Business-to-Business (B2B) exchanges are electronic marketplaces on the Internet where suppliers and buyers interact to conduct transactions. Many B2B exchanges sprung up in 1999 and 2000, each generally focusing on industry vertical, such as electronic components, plastics, or auto parts [2].

B2B Internet trading platforms may take many different forms. They include all Internet-based technical solutions that aim at facilitating the establishment of new trading relationships between companies or at supporting existing relationships. Some B2B Internet trading platforms focus on completing business transactions while others support the integration of IT systems and a third group simply provides information.

B2B Internet trading platforms can take following forms [4]:

- Company web sites: Company sites can be thought of as round-the-clock mini--trade exhibits. In some cases, company web sites serve as the entrance to an exclusive Extranet, available only to customers and registered site users. In other cases, company web sites have direct access allowing them to effectively retail to other businesses. In this sense, company web sites could be considered as a forerunner of Internet trading platforms.
- Product supply and procurement exchanges: A company can shop for supplies from vendors, request proposals, and, in some cases, bid to make a purchase at

a desired price. Sometimes referred to as e-procurement sites, some serve a range of industries and others focus on a niche market.

- Specialized or vertical industry portals: These sites provide a „sub-web" of information, product listing, discussion groups and other features. They have a broader purpose than the procurement sites although they may also support buying and selling. A special form of this type of activities is brokering sites, which act as an intermediary between someone wanting a product or service and potential providers. Equipment leasing is an example.
- Web-EDI: The most basic Electronic Data Interchange (EDI) level consists of a computer-to-computer exchange over dedicated lines of normal business transactions including payments, information exchange and purchase order requests. The second level incorporates an application-to-application design where individual companies link a minimum of one of their in-house systems to the EDI interface, gaining optimal productivity. A new type of EDI is based on real-time data exchange over the Internet between customers, partners and suppliers. Evolving from basic EDI, the solutions are becoming more complex. Participants in the data exchange may use different software, utilize different protocols, and data formats.
- E-marketplaces: They are defined as an online service run by a third party where several buyers and sellers meet to buy and/or sell products and/or services – the famous „butterfly" model (Figure 1).

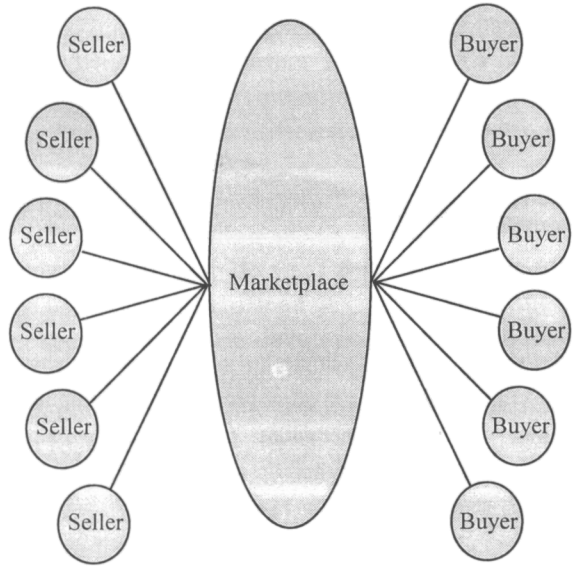

Fig. 1. The butterfly model

Source: [5].

Many B2B Internet platforms have two things in common: they can be used with a web browser and they bring together many suppliers and many buyers. These platforms are called business-to-business (B2B) portals.

Many B2B Internet platforms offer a combination of the different functionalities described below. Therefore platforms offering only one of these functionalities are rather rare The different functionalities are [10]:

- supplier directories and search engines for finding suppliers and getting leads,
- tendering services for finding orders and placing requests,
- classifieds for finding and publishing discrete offers,
- auctions to achieve the highest price when selling,
- reverse auctions for determining the cheapest supplier.

2. B2B exchanges development

Since the beginning, B2B exchanges have had a tremendous growth, Goldman, Sachs and Co. had projected that US B2B sales on the Internet would reached $1,5 trillion by 2004 compared with $114 billion in 1999 [9, p. 36]. The growing interest in B2B e-business is also reflected by the fact that in 1999, venture capitalists poured $17 billion into B2B endeavors, compared with $11 billion in Business-to-Customer (B2C) ventures [9].

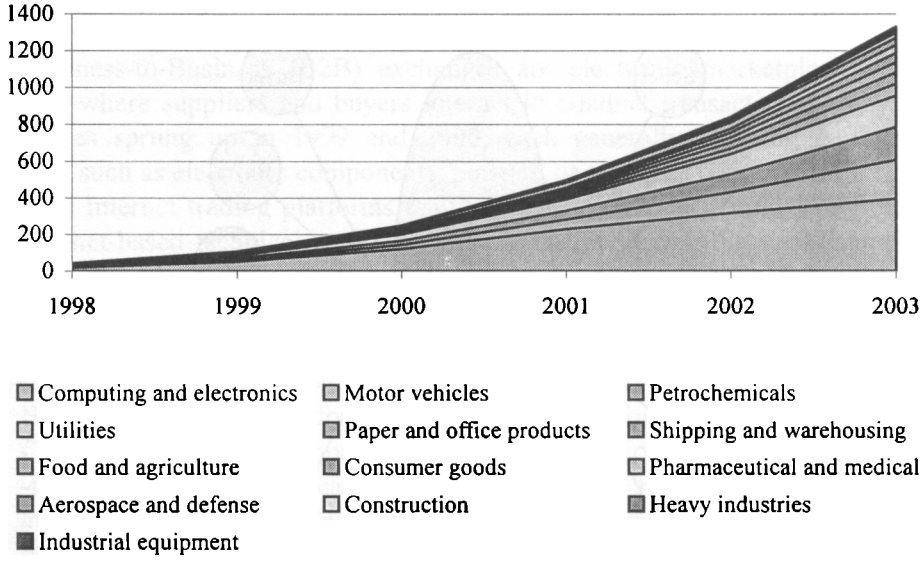

Fig. 2. U.S. Business-to-Business e-Commerce Revenue [$Bn]

Source: author's elaboration based on [11].

Real growth of B2B sales has met above mentioned forecasting. In 2003 US B2B exchanges was estimated on $1,33 trillion (Figure 2). The largest participation in this amount had B2B platform trading computing and electronics, motor vehicles, petrochemicals and utilities.

Despite of rising trade value reached via B2B platform we can observe that since 2000, a consolidation process has started which seems not yet fully completed. It is estimated there are around one thousand B2B e-marketplaces world-wide, with about 300-500 active in Europe (Table 1).

Table 1. Estimated numbers of active B2B marketplaces by region of activity*

Active in	Berlecon Research		eMarketServices	
	4/2002	2/2003	4/2002	6/2003
World	1060	889	1189	1008
North America	669	556	619	447
Europe	381	324	540	516

* Note: The regional information denotes activity within the respective region, not necessarily the headquarters.

Sources: B2B marketplace databases from Berlecon Research (www.berlecon.de), and eMarketServices (www.emarketservices.com).

Concerning the usage of B2B Internet trading platforms by enterprises, the *e-Business W@tch* reports for the 4 largest EU Member States (Germany, France, UK and Italy) that around 5% of European enterprises used e-marketplaces in mid-2002 and early 2003 and that a further 3-4% are planning to do so in the near future. These figures suggest that the overall impact of B2B e-marketplaces is still relatively low, but considerable differences exist between different industry sectors.

In the Information and Communication Technologies (ICT) services sector, for example, 7-12% is regularly trading via e-marketplaces, while a further 6-9% has reported that they are planning to do so (Table 2). Also the tourism industry shows an above-average use of e-marketplaces. It is also interesting to note that the plans to use e-markets seem to be more developed in those industries that already use them to a larger extent, such as in ICT services, tourism or business services. This suggests that e-marketplaces are more suited to the Internet trading demands for some sectors than for others.

Some industries show considerable differences between the e-marketplace use of small and large companies (Table 3). Generally, large enterprises are more likely to use e-marketplaces than SMEs.

While almost 10% of the large enterprises confirm that they use e-marketplaces for selling or purchasing products and services, only about 5% of the SMEs do so. This picture prevails in the data available for early 2003. The respective ratio is 7%

Table 2. Participation in B2B e-marketplaces by sector (2002/03)

Sectors (EU-4*)	Trading on e-marketplaces		Planning to trade on e-marketplaces within 12 months	
	6/2002	*3/2003*	6/2002	*3/2003*
Food, beverages and tobacco	0.7	*0.6*	2.7	*1.1*
Publishing, printing & AV services	4.7	–	3.9	–
Chemical industries	4.3	*2.9*	2.7	*4.4*
Metal products	0.8	–	2.4	–
Machinery and equipment	3.0	–	2.7	–
Electrical machinery and electronics	4.6	*4.0*	3.8	*4.7*
Transport equipment manufacturing	4.1	*3.6*	3.2	*4.1*
Retail	6.6	*4.9*	2.0	*4.3*
Tourism	8.6	*5.5*	5.0	*4.2*
Financial sector	3.7	–	1.6	–
Insurance and pension funding	4.2	–	5.0	–
Real estate activities	2.5	–	1.3	–
Business services	5.0	–	5.1	–
ICT services	11.9	*7.2*	9.0	*5.7*
Health and social services	3.8	–	2.3	–
Total (EU-4*)	**5.3**	***4.9***	**3.4**	***4.2***

Regional coverage: EU-4 (Germany, France, Italy, UK).

* Note that the sector composition of the EU-4 is a different one in 2003 (7 sectors, $N = 2815$) than in 2002 (15 sectors, $N = 5917$).

Source: [7].

to 5% for a subset of the industries studied in 2002. Among current non-users, the percentage of enterprises that plan to start using marketplaces is higher among large enterprises (5%) than among SMEs (about 4%), but not as significant as in terms of active participation. Also this picture is the same in 2003.

Less interest in on line and B2B trading platforms usage is noticed when comprising B2B purchasing in Poland to situation in other EU countries. 12% of all enterprises (with 19% employees) in Poland make purchases on line. But 2% of enterprises do it via B2B trading platforms. This share is relatively higher in other presented countries (Table 4). Comparable or even higher share of enterprises in Poland to other EU countries exchange their documents online with suppliers but there is a few enterprises in Poland using supply chain management systems.

The reasons of such a low interest in online purchases and B2B trading platforms usage can be lower share of enterprises with the computer and the internet access. The percentage of enterprises using computers in Poland amounts to 77% (86% of employees) while in Germany 93%, in UK 80% but with staff of 94% of total employees number in both countries. The Internet access has 66% of total enterprises in Poland while in Germany 80% and in UK 75% almost 90% employees in both countries. Moreover the internet access in Poland is realized applying tech-

Table 3. Participation in B2B e-marketplaces by sector and size class (mid 2002)

Participation in e-marketplaces	0-49 employees	50-249 employees	250+ employees
Food & beverages, tobacco	0.5	4.4	6.9
Media & printing	4.6	5.1	13.8
Chemical industries	3.8	2.4	23.2
Metal products	0.6	7.1	13.5
Machinery and equipment	2.6	5.0	19.5
Electronics	4.3	11.0	7.6
Transport equipment	3.6	3.9	20.6
Retail	6.6	5.2	5.5
Tourism	8.6	11.2	8.8
Banking and leasing	3.7	4.7	1.5
Insurance and pension funding	4.0	4.6	6.4
Real estate activities	2.5	2.5	10.5
Business services	5.0	2.9	3.5
ICT services	11.9	14.5	7.8
Health and social services	3.8	0.0	0.8
Total (EU-4*)	5.3	5.1	9.8
Total (EU-15)	*5.3*	*5.2*	*8.6*
Total EU-4 in 3/2003	*4.9*	*6.0*	*7.3*

* Regional coverage: EU-4 (Germany, France, Italy, UK).

Source: [7].

Table 4. Online purchasing, B2B connectivity and supply chain management in 2003/04

	Online procurement / sourcing						B2B connectivity / SCM					
	Make online purchases		Online purchases >5%		Buy on B2B trading platforms		Exchange documents online with suppliers*		IT system integrated with supplier		Use SCM system	
	% firms	% empl.	% firms	% empl.	% firms	% empl.	% firms	% empl.	% firms	% empl.	% firms	% empl.
Germany	39	56	27	30	12	20	25	33	5	8	2	7
Spain	20	28	11	15	8	9	38	46	6	8	6	13
France	27	37	14	16	6	7	35	50	2	7	1	4
Italy	27	30	17	15	4	6	25	30	9	8	1	3
United Kingdom	48	58	25	29	5	8	46	52	2	9	1	5
Estonia	28	35	6	11	2	3	47	56	3	12	1	4
Poland	12	19	5	9	2	4	40	44	2	3	0	2

Source: author's elaboration based on [8].

nologically less advanced analogue modem [8]. Considering lack of ICT infrastructure one should remember important assertion made by Carr that it was no longer possible to gain strategic advantages from ICT, since their use has become a commonplace [1].

Many Polish and European enterprises still hesitate to fully engage themselves in electronic trade. In some cases, they may have good reasons not to, based on a clear assessment of potential costs and benefits. In other cases, they may underestimate the dynamics that lie behind the transition from paper-based to electronic transactions. The following problems seem to be of particular relevance [8]:

- Lack of awareness of the risks and benefits: Searching for information is not a priority for most of enterprises. It is often unclear whether e-business is beneficial to them.
- Difficulties in identifying the most relevant B2B Internet trading platforms. In most sectors, a great number of trading platforms exists, with some of them of dubious character. Due to the lack of market transparency, it is not always easy to select the right ones, as this would require time and money. This may result in the need to participate in many different Internet trading platforms, with multiple fees and higher investment costs.
- Insufficient clarity of product definitions and incompatible technical standards: The diversity of standards makes it difficult to choose the most stable solution.
- New commercial risks resulting from incomplete information about market rules, business partners and unfair practices: E-marketplaces have their own rules that are sometimes distinct from usual business, e.g. for electronic auctions.
- Financial barriers to enter into e-business: The cost of implementing a secured transaction protocol and to maintain IT systems and websites can be very high. Larger companies can usually better afford these costs, spreading them more widely and benefiting from the economies of scale. The costs of ICT usage are lower for large enterprises, even though their systems are more sophisticated, as smaller enterprises are forced to invest six times more human capital in their poorer ICT infrastructure and medium-sized enterprises have to invest about twice as much.
- Lack of qualified personnel: Qualified personnel are either not directly available within the existing staff of the enterprise, or hard to find on the job market. High salaries required by qualified IT experts are often not affordable.

3. Conclusion

Corporations' acceptance of the Internet in the new economy has sparked a revolution in the way businesses buy and sell products from each other. These business-to-business transactions are increasingly being done over Internet-based net markets or B2B exchanges. If today's bricks and mortar companies are to survive, they must reinvent themselves to integrate the Internet into everything they do and connect with one or more B2B exchanges. The first marks of the change could be noticed – the incredible increase of purchasing value made using B2B in last few

years, in computing, motor vehicles and petrochemicals industries, mainly. Considering the presented effects of B2B marketplaces for purchasing, it can be stated that various forms of B2B solutions can be used, the share of enterprises using B2B platforms depends on the branch and the functioning scale (employees' number), the usage of B2B platforms in larger enterprises are more common. There is a clear difference in apply of B2B platform to procurement in Poland and other EU countries. Usage of B2B platforms for business activity is quite scarce then in developed European countries; in exchange documents online with suppliers, Polish enterprises can be compared to the level of other countries. There are still many problems to solve to make B2B exchanges more common in purchasing process organizing the main of them are as follows: lack of awareness of the risks and benefits, difficulties in identifying the most relevant B2B Internet trading platforms and new commercial risks resulting from incomplete information about market rules, business partners and unfair practices. Considering future development of B2B it could be interesting to refer to W.D. Raisch [6] suggest, he thinks that exchanges those until now have been focusing on goods exchanges and transaction systems, will evolve to embrace the exchange of knowledge. In fact, intra-enterprise knowledge exchange systems have been evolving for some time now (with mixed results, but inexorable forward progress overall). Knowledge exchange of information in context, which is usable for decision making as well as for learning (for example, best practices will be exchanged between willing enterprises, affecting the development of professionalism and management skills).

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TRANSAKCJE B2B – SZANSĄ DLA PROCESU ZAOPATRZENIA?

Streszczenie

Artykuł prezentuje założenia transakcji B2B wraz z przeglądem ich form i pełnionych przez nie funkcji. Szybki wzrost przychodów z handlu za pośrednictwem internetowych platform obsługujących przedsiębiorstwa jest następnym obszarem poruszanym w artykule. Autor porównuje również skalę zastosowania platform internetowych z realizacją zaopatrzenia przedsiębiorstw w Polsce i w wybranych krajach Unii Europejskiej. Próbuje również wyjaśnić przyczyny mniejszego zainteresowania zaopatrzeniem za pośrednictwem platform internetowych w Polsce w porównaniu z innymi krajami UE, wskazuje także na problemy ich zastosowania. W zakończeniu zaprezentowano również jeden z ciekawszych scenariuszy rozwoju platform B2B.

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