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Selling of agricultural products via the Internet

Sprzedaż produktów rolnych przez Internet

W opracowaniu zaprezentowano przykłady wykorzystania Internetu w sprzedaży produktów rolnych. Na podstawie analizy polskich i zagranicznych przypadków autor omówił różne formy elektronicznej sprzedaży produktów rolnych zarówno typu B2C, jak i B2B. W opracowaniu omówiono sposoby funkcjonowania oraz korzyści z wykorzystania różnych rynków elektronicznych i sklepów internetowych produktów rolnych dla rolników oraz nabywców.

Introduction

Development of the Internet caused that more and more enterprises use it in their business activities. Besides communication and promotional uses, the Internet is growing in popularity as a channel for selling products. Agricultural producers are also trying to develop this marketing channel in spite of many barriers of selling agricultural products via the Internet. Farmers may use the Internet to sell agricultural products for consumers and also for organizations.

The main objective of this paper is to identify different forms of selling agricultural products on the Internet. The author also describes operation of electronic agricultural marketplaces and benefits of the Internet selling. The methods used to write this paper were observations of websites and case studies of the chosen electronic stores and marketplaces. In the paper the Polish and foreign cases are included.

The paper consists of two main parts that are devoted to the two basic types of electronic commerce that are B2C and B2B transactions. Because of the different nature of the two types of transactions, the B2C and B2B cases of selling agricultural products are described separately in the paper.

Internet as a medium and a marketplace

Introduction of the new Internet service World Wide Web caused a dynamic development of the medium. WWW documents have been easy to create and enabled many features that were recognized by scientists as distinguishing the new media from the old, traditional media such as television, radio and newspapers. The most important feature of the new media is interactivity. It is the most exceptional feature of the Internet because it allows the dialog between Internet users and the dialog between users and the medium. The other features that are offered by the WWW, html based documents are:

- multimedia – the feature that allows to combine different media forms such as text, static picture, film;
- capacity – the feature that allows to publish on the Web unlimited information on products and firms,
- hypertext – that allows easy and logic movement among the Web sites;
- global reach – that allows firms to present their offers in spite of the distance of markets.

All the features mentioned above determine specificity of the medium and we can also think about the medium as a market¹. The Internet allows to operate many forms of markets in the virtual space. Internet storefront, electronic malls, electronic exchanges are example forms of virtual marketspaces. Internet allows migration of traditional markets to the virtual marketpace and support transactions between buyers and sellers electronically.

B2C electronic commerce refers to the transactions between an enterprise and a consumer. B2B electronic commerce refers to the transactions between enterprises.

Using Internet by farmers in B2C transactions

Farmers can use Internet on many possible ways to sell their products. They can promote their products creating and promoting Website, place a form on their Website for collecting orders from buyers, post their offers on the electronic catalogues, take part in electronic exchanges, using the electronic system of their customers.

Using Internet as a way of selling agricultural products is changing marketing channels in the agribusiness industry. Internet can serve farmers as an alternative marketing channel. Farmers who establish a website by which they sell agricultural products, thus use quite a different marketing channel. It helps many farmers to find new customers, to cross geographic market limitations and to find new markets. Figure 1 presents a Website of a farmer that sells honey by its Website.

Honey producer using his Website as a marketing channel is able to avoid distributors such as wholesalers and retailers and to sell directly to the customers. This kind of website can serve as B2C and at the same time B2B electronic commerce enabler. The farm honey producer can sell the offered products directly for the consumers through B2C transactions, but also to the retailers, wholesalers and other organizations that represent B2B electronic commerce. The B2C model of selling agricultural products run into some difficulties connected with the specificity of agricultural product and agricultural production, that comes from such features as:

- most of agricultural products are perishable, not durable, and difficult to store;

¹ Hoffman D., Novak T.: Marketing in Hypermedia Computer-Mediated Environment. Conceptual Foundations. Journal of Marketing. (1996), Vol. 60, pp. 52

- monetary value of agricultural products is relatively low comparing their cubic volume, and this causes problems with transport and storage;
- seasonal production causes that some fresh agricultural products like fruits are available only seasonally on the market;
- consumers usually buy food products in small quantities;
- consumers most often buy different food product (processed and not processed agricultural products) in a single transaction.

Figure 1. Website of the honey producer

Pasieka prywatna Mieczysław Łepicki

Oto oferta produktów pszczelich uzyskiwanych z naszej pasieki.

Okazja dla mieszkańców Warszawy i okolic. Bezpłatny odbiór osobisty.
Więcej szczegółów w dziale [Promocje](#).

Wszystkie produkty można zamówić przez Internet i otrzymać pod wskazany adres przesyłką pocztową lub kurierską. Płatność za przesyłkę można uregulować przelewem na nasze konto (podajemy je mailem) lub gotówką przy odbiorze paczki.

Prosimy o zamawianie produktów mailem na adres miody@miody.net
W treści maila prosimy o podanie dokładnych danych kontaktowych do siebie, dokładnej specyfikacji zamawianych produktów, sposobu zapłaty oraz żądanego sposobu dostarczenia towaru.
Po otrzymaniu zamówienia i sprawdzeniu możliwości realizacji w ciągu kilku dni będziemy się kontaktować zwrotnie w celu potwierdzenia zamówienia oraz podania wagi i ceny przesyłki.
Po potwierdzeniu nastąpi realizacja zamówienia.

Source: <http://www.miody.net>

The next very important issue in the context of selling agricultural products by farmers online is the fact that food products don't belong to the group of popular Internet buying products. Convenience goods are less frequently purchased by the Internet than shopping goods. The Polish food market is estimated to be worth about 200 billion zloty, and only about 5% of the value is generated by the Internet selling². It is relatively low

² Internetowa sprzedaż artykułów spożywczych przekroczy w tym roku w Polsce wartość 300 mln zł, 2010, <http://www.portalspozywczy.pl/handel/wiadomosci/internetowa-sprzedaz-artykulow-spozywczych-przekroczy-w-tym-roku-w-polsce-wartosc-300-mln-zl,27481.html>

comparing with the country like Great Britain where Internet selling of food products is worth 9,5 billion GBP³.

Internet grocery customers repeat their purchases week after week with tight relationship with the grocer. Therefore user interaction on the websites that sell food is much more substantial comparing with others B2C sites. Shopping for food on the Internet is much more sophisticated than most shopping transactions. Average e-grocery purchase order is several different items comparing to one or two items in the other B2C orders⁴.

In the food Internet shopping also very important is that the ordered items are delivered very quickly to the customers⁵.

In spite of the barriers and difficulties, online direct B2C sale of agricultural products is growing. The above mentioned example of honey producer refers to the agricultural products that are quite easy to store because honey is relatively less perishable product comparing with fruit and vegetable. From the producers perspective it is more difficult to sell online such seasonal and perishable products like fruit in B2C online transactions. But even fruit producers try to avoid distributors and sell their products online.

A very interesting is the case of the online citrus products shop called Fresh Citrus Direct (www.freshcitrusdirect.com.au) established in Australia by Pyap farmer Michael Arnold. Figure 2 presents the website of the citrus electronic store.

As the farmer says, the traditional marketing channel consists of many different steps along the way from packers to supermarkets, and all the channel participants get their share. Using traditional marketing channels, after the fruit is picked from the field, it is graded, freighted, distributed, and all the processes last at least a week. Using the online route consumers get much fresher products two or three days after picking from trees. Selling citrus fruit by traditional distribution channels makes 50c a kilogram, but selling online rises to about \$3,5 a kilo⁶.

Customers can order fruit in different ways such as: secure online purchasing with card payment, direct deposit, phone, or by fax and mail.

³ Rośnie sprzedaż produktów spożywczych przez Internet, 2011, <http://www.portalspozywczy.pl/handel/wiadomosci/rosnie-sprzedaz-produktow-spozywczych-przez-internet,44720.html>

⁴ Keh H. Shieh E.: Online Grocery Retailing: Success Factors and Potential Pitfalls. *Business Horizons* Vol. 44, No.4, July 2001, pp. 73

⁵ Warkentin M., Bajaj A.: The On-Demand Delivery Services Model for E-Commerce, in Gangopadhyay, Managing Business with Electronic Commerce: Issues and Trends. Hershey, PA: Idea Group Publishing, 2002 Idea Group Publishing, 2002, pp. 131-150.

⁶ AdelaideNow, 2010, Riverland farmers are fighting back against supermarkets cutting into their profits by selling fruit directly to customers online, <http://www.adelaidenow.com.au/news/south-australia>

Figure 2. The website of the citrus producer from Australia



Source: <http://www.freshcitrusdirect.com.au>

Citrus are delivered by Australia Post. Fruit is picked straight from the tree and placed into styrofoam boxes. The boxes are ready for many other uses and can be recycled.

The online shop operates seasonally. For example Internet users that visited the website on 23.03.2011 could read on the website following message “Season 2010 is now finished, we will start up again around late May/June in 2011 when early varieties become ripe”. The farm sells online only the fruit from its field and because of seasonality, breaks in sale are unavoidable. In spite of it the farm is realizing their Internet marketing, especially promotion activities all year long.

The online selling activities are strongly supported by Internet promotion. On the selling website the farmer and his family presented their belief that citrus fruit is an exceptional food source because it is not only great tasting but also highly nutritious food product. The farmer also explains on his website the factors that influence citrus fruit taste and points that a very important factor is to pick fruit when it is perfectly ripe. Moreover, a very important factor is freshness that has also its impact on great fruit testing. The freshness can be achieved by minimizing the time taken between picking and eating fruit. The main goal of the electronic storefront is to bring consumers great tasting fruit by picking it when the citrus is naturally ripe, then packing it and delivering directly to consumers in the shortest possible time. Selling online fruit from his field the farmer cuts out the middleman and ensures that consumers get a very high quality of his

products that is probably not possible to achieve using traditional, long marketing channels. On the shop's website there is also information connected with the production of fruit on the farm. Consumers get known, that on the farm highly efficient irrigation methods are used to water trees. Soil water levels are monitored electronically. The farm uses an Integrated Pest Management (IPM) program that allows better pest control and minimizes pesticide use. The farm also complies with industry food safety benchmarks by using the HACCP quality assurance system.

The electronic fruit store is also supported by the social media marketing. Figure 3 presents Facebook group of the citrus producer.

Figure 3. The Facebook group created by the citrus fruit producer



Source: <http://www.facebook.com>

Social media allow people to communicate and to share information about themselves. The popularity of social media caused that social media marketing is growing in importance. The most famous social media portal is Facebook. The portal can be used by every firm, from every industry. Personal profiles, business fan pages and groups are created by large firms as well as small and medium enterprises. By creating its fan page on a Facebook even a small firm can build its brand, create communities, find new customers and maintain long lasting relations with them. Using social media firms can promote events, conduct promotional contests. By social media firms can personalize brands, can talk directly to their customers and listen to them. Firms can use social media in quite different marketing purposes: to increase sale, to improve customer

service, to reduce promotional costs, to build interest of journalists, bloggers and analysts⁷.

Very often, it is too expensive for farmers and very time consuming to maintain the website and perform all the marketing activities connected with good electronic storefront operation. That is why they decide to use electronic intermediaries that enable them to focus only on their production efforts and not to bother about all the Internet marketing activities. In this situation farmers only are to pay commissions (usually percentage of their sale value).

This is the case of Home Grown Cow (www.homegrowncow.com), agricultural shopping mall where consumers can buy various kind of meat. Figure 4 presents the website of the Home Grown Cow.

Figure 4. The website of Home Grown Cow

The screenshot shows the Home Grown Cow website. At the top left is the logo with a cow icon and the text "Home Grown Cow Beta" and "Connecting farmers with customers who care where their meat comes from." To the right are links for "Hi Guest", "Checkout", "My Cart", "Sign In", and "Sign Up". Below the logo is a navigation menu with "Home", "For Eaters", "For Farmers", and "About Us". A large banner image of several cows is centered. Below the banner, a message reads "We are not accepting customer orders yet, but we are...". The main content area features a large heading "Now Recruiting Farmers!" and a sub-heading "Are You a Livestock or Poultry Farmer?". Below this is a question "Do you raise livestock or poultry?" and a text block: "Are you looking for an additional market for your products? How about a company that will find customers, take orders, collect payment, and arrange for shipping/delivery? Well that's Home Grown Cow. Help us create the best national network of farm-direct". To the left is a "Search for Products" sidebar with "Meat Type" (Beef, Chicken, Pork, Lamb, Other) and "Meat Category" (Bulk, Cuts, Ground, Roasts, Miscellaneous) sections. To the right is a "Sign In or Sign Up" section with fields for "Your Email*", "Your Password*", and "Keep me signed in" checked, along with "Sign In" and "Sign Up" buttons. Below that is a "Need Help?" section with a link "Send us a message".

Source: <http://www.homegrowncow.com>

The electronic market provides farmers a full service electronic commerce sales channel. The electronic mall was founded in September of 2010 but the mall is developing very fast. This electronic market gives farmers who are interested in direct marketing of their products, an opportunity to sell online. Before emerging of the electronic mall many farmers were not able to sell their products directly to consumers

⁷ Treadaway Ch., Smith M.: Godzina Dziennie z Facebook Marketingiem. Helion Press 2010, pp. 86

because their farms are very distant from metropolitan areas, where demand for local foods is much greater comparing with rural areas. The electronic market enables farmers to post their offers with description of their operation and their products. Farmers set their own price that is price for direct purchase of consumers. The other services offered by the mall to farmers are credit card processing, order conveyance and shipping facilitation. Both consumers and farmers are protected by payment safety net that keeps consumer billing information safe and also protects farmers by ensuring customer commitment. Farmers pay for Home Grown Cow commission when they make a sale and the commission is fifteen percent of sale value. The electronic market's task is to find customers, taking and processing orders, collecting payments, arranging for shopping and delivery.

The goal of Farm Grown Cow is to create national network of farm-direct meat and poultry producers. The electronic market accepts any kind of meat. It can be beef, chicken, pork, lamb, bison, turkey, emu. The electronic platform also accepts any kind of farming practice. Therefore it can be organic production, free-range method, grass-fed and also conventional production method.

The process of the electronic market usage by farmers consists of such steps as: signing up and creation of farm profile, loading inventories to the profile with availability dates (this could be bulk meat as well as cuts), the electronic mall conducts marketing activities in the purpose to attract traffic to the mall and to find consumers for the offered products, consumers place orders and give their credit card information, in case the order is accepted by the farmer, Home Grown Cow charges the credit card of a consumer and notifies the consumer about his order that it is already placed. The consumer receives the ordered product. Once the customer has received his order the electronic mall pays the farmer. The electronic meat market is of great benefit to the customers because they know where the ordered meat is coming from, they have the possibility to specify their order according to many criteria (location, farm practices, farm size, meat type, form of cuts or bulk, delivery method), they are also assured that their billing information is safe and is not shared outside of the electronic mall.

For the electronic market to be successful it is very important that farmers publishing their offers take a great care when identifying and describing their production methods and other farming practices. It is very important that they do it accurately for the good image and success of the electronic marketplace.

The electronic system offers farmers easy product descriptions by using graphic symbols of production practices. The practices are as follows:

- USDA Certified Organic – means that the food was not grown using synthetic fertilizers, chemicals, sewage sludge, is not genetically modified, not irradiated. Moreover organic meat is fed using only organically grown feed and the feed is without any animal byproducts. The meat is not treated with antibiotics, hormones. The animals have access to the outdoors.

- USDA Never Ever Three – means that animals are not exposed to animal byproducts, growth hormones and antibiotics.
- Pasture Raised – means that animals are not confined to any facility and have constant access to pasture.
- Grass (Forage) Fed – means that grass and forage is the feed consumed by animals. The exception is milk that is consumed prior to weaning. The forage that is used in the production process consists of annual and perennial grass, forbs, browse, or cereal in the pre-grain state. Animals have continuous access to pasture in the season period and are not fed with grain and grain byproducts. As a feed sources also can be included crop residue (without grain), silage, baleage and hay.
- Free Range – means that poultry have access to the outside. This applies to poultry only.
- Non-Hormone Treated – means that no hormones were used in the animal production.
- No Antibiotics Added – means that antibiotics were not used to the animal during its lifetime. Animals that are ill are taken out of the herd and are treated but are not sold using this label).
- No Animal ByProducts – means that no mammalian and avian byproducts were used in the production process to feed animals. Only fish byproducts, mineral and vitamin supplementation can be used.
- Humane Animal Treatment – means that the farm was certified by Humane Farm Animal Care Organization and by Animal Welfare Approved program that is a guarantee of human production practices in the animal production.
- Halal – means that products have been handled under Islamic authority and with accordance with the Islamic law.
- Kosher – means that food is prepared according to rules and regulations of the Jewish Dietary Laws.
- Third Party Verified – means that farm practices were verified by USDA.

The products bought by customers at Home Grown Cow can be delivered right to their doors or customers can collect their purchases directly visiting the farms. Farmers can also choose graphical symbols representing size of farm (small, medium, big), and delivery option (local delivery, local pickup, shipment by carrier service).

Prices that are listed at the electronic mall are chosen by farmers and are retail prices because the offer of the market is targeted towards consumers. The prices offered at the electronic market in many cases are self explanatory but sometimes they can vary depending on the quantity bought. Customers buying larger bulk should consider some important issues such as live weight of the product, hanging weight, dressed weight. When customers decide to purchase bulk meat they are not certain the exact price because the animal from which the meat come may still be living and growing. Therefore farmers to price this product will base the price on such factors like cost of animal production, margins that they achieve, processing fee (because small farmers most often uses processing firms to prepare meat to sell it online) and farmers will

estimate of what will be the weight of each quarter or side of meat. But these customer uncertainties are not significant so for customers that are accustomed to buying in bulk it is not a barrier to buy the products.

All products sold at Home Grown Cow are processed in the meat processing establishments that are licensed by government either at the state or federal level. In the table 1, there are listed benefits from using the electronic B2C meat market both for farmers and consumers.

Table 1. Benefits of using Home Grown Cow electronic market for farmers and for customers

Benefits for customers	Benefits for farmers
<ul style="list-style-type: none"> • Knowing the origin of the bought food • Possibility to select preferred farming method • Ability to buy from the vast, nationwide network of US meat producers • Ability to buy bulk quantities • Ability to buy specialty meat • Many possible ways of acquiring purchase • Confident system of electronic paying for the bought products 	<ul style="list-style-type: none"> • Better access to new customers • Increased revenue by new customer base and marketing activities realized by the electronic market (with a continuous online exposure to many millions of potential customers nationwide) • Possibility to choose prices for the offered products • Marketing support and help in posting and pricing products • Farmers do not have to pay for the electronic market services if they do not sell their products • Better inventory planning • Support for sustaining of small farms in the economy that is dominated by large farms

Source: Based on information provided by Home Grown Cow on its website: www.homegrowncow.com

What is also very interesting is that the electronic mall provides its services even for farmers who do not have access to the Internet⁸.

A very good example how local farmers join their forces to sell their product online is an online farmers' market created by farmers in Northeast Georgia in United States⁹. The market is called Locally Grown (www.northeastgeorgia.locallygrown.net). Figure 5 presents the website of the farmer's market.

The electronic B2C market of food products Locally Grown is the Internet based market that creates very unique way to provide fresh food and make it more accessible to the local citizens. The main goal of the initiative is to encourage producers to make living from farming and food production. Consumers can buy on this electronic mall, such products as: dairy, meats, eggs, milled products, vegetables, herbs, flowers. Products that are sold on this market are produced using sustainable production practices. Growers that provide products on this market are committed to chemical free farming. They also follow strict standards to ensure that the offered products are of high

⁸ Aikman K., 2011, Home Grown Cow provides farmers with E-Commerce opportunities, <http://www.mikeroweworks.com/2011/02>

⁹ Stone J.: Local farmers sell products online, 2010, <http://www.theclaytontribune.com/articles>

quality. The products offered on the Locally Grown e-marketplace are produced right on the local areas in Rabun, Habersham and adjacent counties. The online marketplace is not a cooperative, though farmers taking part in the e-market use cooperative efforts to increase the availability of local food products to the local consumers. Promoting the online marketplace farmers inform local citizens that the electronic farmers' market provides many benefits to the local community. It builds local economy because small farms increase economy with relatively low capital costs. Anybody who grow plants and produce food without the use of chemicals could become a vendor of products to the electronic market. Buying food products on this Internet market also contributes to reduction of the environmental impact of producing food products. It is also connected with reduction of chemical, fuel and packaging materials usage. Moreover, better understanding of origins of the offered food may influence many positive behaviors of consumers.

Figure 5. The website of electronic agricultural farmer's market Locally Grown



Source: www.northeastgeorgia.locallygrown.net

The online marketplace allows farmers to describe their products and to post photos of their products and they can also include recipes connected with preparing unusual items.

Customers buying on this e-market don't give credit card information because the electronic marketplace only accept cash at the time when customers pick-up bought products from the appointed pick-up points. Pick up hours are very convenient to

customers unlike the traditional farmers' market, where customers have to be present on the marketplace at very early hours.

The process of ordering products by customers is very simple and customers choose the product item, amounts of product, and producer. They can determine from what farm should be the chosen products. The ordering system is similar to the usual shopping cart that can be found on many selling websites.

For the electronic marketplace to operate, some financial sources are needed. The basic source of the electronic market financing are commissions paid by farmers that are seven percent of farmer profit. This commissions goes to the electronic market to finance website operation, petrol to make the deliveries and the other needed supplies.

There are many cases in the world when farmers go online to sell their products. In China the development of Internet infrastructure allows many small farms to sell their products online without the need to go for the local farmers' market¹⁰.

In Vietnam turnover from online sale has surprised many farmers. The farmers previously could only take their good to the local markets. On many websites Vietnamese farmers are offering agricultural products. Internet farmers' markets prove to be very bustling these days. Vietnamese farmers offer on these websites such products as chicken, rice, carp, etc¹¹.

B2B electronic sale of agricultural commodities

Electronic commerce B2B transactions can be conducted over the Internet, intranet, extranets or private networks¹². Such transaction take place between businesses and any other organizations.

The basic B2B transaction types are:

- sell-side transactions that occur when one seller sale products to many buyers;
- buy-side transactions that occur when one single buyer buys products from many sellers;
- exchanges is the model occurring between many sellers and many buyers;
- collaborative commerce represented by all activities other than buying and selling among organizations such as collaborating, sharing of information, communicating etc.

¹⁰ Chinese farmers go online to sell products, AFP, March, 2011, <http://au.news.yahoo.com>

¹¹ Vietnamese farmers now sell online (2010), <http://english.vietnamnet.vn>

¹² Mahadaven B., Making Sense of the Emerging Market Structure in B2B E-Commerce, California Management Review, 2003, pp. 3, <http://www.iimb.ernet.in/~mahadev/cmrb2b.pdf>

Many of these electronic commerce B2B transactions are conducted without the help of any traditional intermediaries. But the electronic B2B transactions are very often enabled by the new type of intermediary that is electronic intermediary. The electronic intermediary is very often a third party that is creating an public electronic marketplace. In the chapter the author focuses on the electronic public marketplaces (electronic exchanges) usage in agriculture. The electronic marketplace can be horizontal and vertical. The agricultural commodity electronic marketplaces are of the vertical type because they are operating particularly in the agribusiness sector. The electronic marketplaces can be used by market participants in the purpose of long-term buying or short, spot buying. Electronic exchanges are electronic meeting places for many buyers and many sellers, but besides the basic many-to-many model of electronic B2B transactions they also offer many-to-one and one-to-many models of transaction and can be very often used as enablers of supply chain processes. The electronic exchanges very often offer to the market participants, the mechanism of dynamic pricing that refers to the rapid movement of price over time. Price in the settling process model are changing by the seconds. In the process of dynamic pricing a company posts a bid to buy products. Then electronic forward or reverse auction is activated. Buyers and sellers can observe the bids in the real time and can interact with the bids. At the end of the process a deal is struck when the exact match on price is achieved between buyer and seller.

Electronic marketplaces can generate their income in many ways. Very often electronic market participants pay transaction fees that is usually the percentage of the transaction value. Fees can be also charged from market participants for using special services of the electronic market. Some of electronic exchanges also generate income by membership fees and advertisements placed on the electronic marketplace website.

The agriculture and agribusiness specificity can impact the development of electronic marketplaces in many ways. For example the Polish market of agricultural commodities is characterized by many agricultural producers. The agricultural producers meet on the market very strong bargaining power of their customers that are consolidated food industry processors, distributors and other organizations that buy agricultural commodities in large quantities. Very often growers do not have any alternative channels to sell their products and they sell only to the local buyers. That is why the situation is very similar to the monopsony conditions¹³. Electronic marketplaces seem to possess many features and electronic tools that promise to change this not favorable situation for farmers. Using electronic commerce B2B platforms they can find buyers in an easy and fast way and can get much higher price comparing to the price achieved by the negotiation with the local buyers. The Polish agricultural commodities market is very dispersed, especially at the sell side of the market. Such dispersed and fragmented agricultural markets seem to be very well fitted to the development of public electronic marketplaces created by the third side electronic intermediaries¹⁴.

¹³ Karasiewicz G.: Systemy dystrybucji artykułów rolno-spożywczych na rynku polskim, Wydawnictwa Naukowe Wydziału Zarządzania UW, Warszawa, 2001

¹⁴ Nicolaisen R.: How will agricultural e-markets evolve. Proceedings of the USDA Outlook Forum, Washington, DC, 2001, pp.20

Electronic marketplaces can be also of great benefit for buyers of agricultural commodities because it broadens their market base and market reach (among many other benefits).

Electronic marketplaces can differ in the scope of market functions realization because of different market agricultural market structures in every country. The hypothetical services that may be offered by electronic exchanges are for example: searching and browsing buy and sell offers, automatic matching buyers offers with those of sellers, providing and analyzing important market information for the electronic market users, sometimes financial and logistic transaction support is provided. The electronic marketplaces also provide efficient ways of communication among electronic market participants, vertical integration of information systems between organizations, support for efficient cooperating in the supply chain etc.

In Poland the most developed and complex electronic exchange of agricultural commodities is IGT electronic platform (www.ewgt.pl). Figure 6 presents the IGT website.

Figure 6. The website of IGT electronic platform

The screenshot shows the IGT website interface. At the top, there's a navigation bar with 'START', 'Tabela Ofert', 'Przetargi', 'Informacje', 'O nas', and 'Szukaj'. Below this, there are several content blocks: 'Ważne' with news articles, 'Nowości' with a news item about grain prices, 'Ceny terminowe' with a table of futures prices, and 'Tabela Ofert' with a table of current offers. The 'Tabela Ofert' table is as follows:

Towar	Ilość	Cena
S Cukier biały	400 t	3 67 zł/kg
S Jęczmień	50 t	790 00zł/t
S Nawozy NPK	48 t	1385 00zł/t
S Nawozy NPK	300 t	1615 00zł/t
S Owies	22 t	1100 00zł/t
S Owies	23 t	850 00zł/t

Source: <http://www.ewgt.com.pl>

The electronic market B2B market started its operation in 2001 year. IGT enables farmers and enterprises to sell and buy commodities that are standardized. On the electronic market predominate transactions of meat and cereal. Besides agricultural

commodities the market also offers fuels, steel and other raw materials and resources. The electronic system of the market generates in the real time price information of products sold on this market. The generated price data are published on the electronic exchange website.

There are two ways of price determination on the electronic exchange. The first method of establishing price is auction and the second is catalogue price in the table of offers. Farmers or food industry enterprises can take part in the electronic exchange provided that they registered at the electronic market's website.

The electronic marketplace consists of two main parts that is table of offers and auction system. To use fully table of offers one must register at the website. For not registered users, only searching for offers option is available. Table of offers is an Internet platform enabling market participants to publish their sell and buy offers. The offer published in the electronic system is treated as an offer with interpretation of the civil code. The electronic table system provides a very safe mechanism of performing transactions. The mechanism consists in down payment that has to be paid in by buyers at the electronic market's bank account. Only when the transfer has taken place electronic market informs the seller about the event and the seller can give the bought commodities to the buyer. After the delivery the money are transferred from e-WGT bank account to the seller's bank account. Searching for offers is possible using many criteria. Offers can be searched by: recently added offers, type of commodity, region, price, name of supplier. Preparing the offers market participants (sellers or buyers) should decide if they want to use safe transaction mechanism by marking a proper option in the electronic system. In a form, market participants should announce information concerning commodity, type of offer, terms of delivery. After filling the form also the next form referring to the particular commodity should be filled out.

Table of offers enables users to negotiate prices. The negotiation process can be realized using text communicator that is a part of the electronic system. The electronic market participants can also communicate with each other using e-mail. To realize transaction the publisher of the offer has to accept offered price and other transaction terms proposed by the opposite side. The completion of a transaction is interpreted as entering into an agreement.

The second part of the electronic market is an auction system. The auction system can be used by certified brokers exclusively. To take part in the electronic auction, brokers should possess deposit registered by the electronic marketplace. Brokers can search offers using many possible criteria. Brokers can also manage their own offers by adding new offers, acceptance of offers proposed by their clients, withdrawing offers, attaching extended descriptions to the offers, copping offers. They have possibility to browse and watch current trading sessions as well as results of past trading sessions. The system allows them to create offers and making bids in the auction.

The main benefits of the electronic marketplace for the Polish farmers are:

- better prices for the offered products,

- dynamic and competitive mechanisms of price discovery,
- new, alternative distribution channels,
- possibility to avoid intermediaries.

A similar electronic marketplace is created in India. The National Spot Exchange (NSEL) is an electronic commodity spot market. The website of the NSEL electronic marketplace is presented as figure 7.

Figure 7. The website of the electronic public marketplace NSEL in India

The screenshot shows the National Spot Exchange Limited website. At the top, there is a language selection dropdown (Hindi, English) and navigation links for Home, About us, Careers, FAQ's, and Contact us. The main navigation bar includes Market Data, Products, Services, Trading, Warehouse, Membership, News & Events, e-Series, and Resource Centre. Below this is a market data ticker showing various commodity prices like GAJAGOLD, GLDCOMBTRZ, GLDBMCBHY, GLDINDOREZ, and GLDMAJIMCO. The main content area is divided into several sections:

- You deal in Commodities We have solutions:** A section with a 'Our Services' dropdown menu and a 'GO' button.
- Introduction:** A text block describing NSEL as a national level, institutionalized, electronic, transparent spot market.
- Exch. Circulars / Exch. Updates:** A list of updates including 'Revised Transaction Charges', 'Commencement of Spot Trading', and 'Additional Delivery centre'.
- e-Series:** A table with columns for Buy and Sell, showing 'NoData' for e-Gold, e-Silver, and e-Copper.
- Press Coverage:** A list of news items, including 'Share the tag for e-series in the Business Line' and 'NSEL to launch new Agri products by August this year'.
- Investment in Commodities - Retail Investors:** A section explaining how retail investors can buy commodities in small denominations.
- Winners Of Contest:** A section mentioning '7-3-11 Atul, Jain, Mumbai'.
- How to Invest in e-Gold & e-Silver:** A promotional graphic.
- Predict e-Silver prices:** A graphic with a shield icon.

Source: <http://www.nationalspotexchange.com/>

It provides a very transparent and centralized electronic platform for trading commodities. Market participants can access the market remotely. It facilitates risk free transactions of commodities that are specified of quantity and quality. The group of electronic market users include farmers, trades, processors, exporters, importers and the retail market participants. Besides electronic market transactions the electronic marketplace also offers many other services such as warehousing, quality certification, financing of warehouse receipt, etc. The National Spot Exchange has obtained trade licenses from state government to facilitate online exchanges and delivery of various agricultural commodities. The electronic exchange operates since 2008 year and provides electronic trading platform helping the sellers to sell agricultural products directly to end buyers. The NSEL electronic marketplace has more than 500 registered members that have access to over 3000 trader work station. The electronic exchange has a market share of over 98% of the country electronic commodity spot market. The electronic market has changed the Indian trading of agricultural commodities in many ways:

- thanks to the electronic marketplace farmers in India for the first time have started to take part in electronic exchanges;
- they have begun to sell seed without help of any traditional intermediary;
- the warehouse receipt allowed agricultural producers to get credits at lower interest rates and significantly enhanced their holding power;
- the electronic market also introduced auction method of transaction to the Indian trade of agricultural commodities;
- the electronic exchange introduced the procurement services to improve bulk buyers and to increase efficiency of supply chains of agricultural products in India;
- NSEL made it easier for agricultural producers to get credits by providing credit facilities at the electronic marketplace.

The main goal of NSEL electronic marketplace is to bring a large number of market participants on at the one, single electronic point for efficient spot price discovery and make sure that the commodities traded at the electronic exchange are delivered on time without any risk of the buyers and sellers.

All commodities at the market are traded in contracts using the electronic trading platform. Contracts are of single day duration and only the settlement cycle is different depending on the type of commodity and realized market practices. One single commodity can have multiple contracts with different market location, size of the single contract, and settlement cycle.

The electronic system of the National Exchange supports two basic types of markets that are spot market and auction market.

The prevailing type of spot market trading are single day trading contracts. The contracts are opened every day as a result of the traded contracts there is a compulsory delivery of the traded commodities. The model of spot market transactions is many-to-many. Each of the traded contracts have assigned particular delivery locations where the traded at the electronic commerce platform commodities can be delivered. The very important feature of this market is that the electronic marketplace is taking part in the product certification. Every seller that wants to sell their agricultural commodities at the electronic market is required to bring the commodity to the warehouse belonging to the electronic exchange. In the warehouse the commodity is weighted and quality certification is realized. The process of certification is done by quality certifying agents. Only the commodity that is the same to the contract specification of the electronic exchange can be allowed for trading on the market.

Auction electronic market is performed for selling specific brand of commodity. Auction market is performed for few hours during the day. The model of the electronic auction is one-to-many. The trading mechanism can be divided into two basic forms of auction that are forward auction and reverse auction. In the model of forward auction a single seller is selling his products to many buyers. In the reverse auction, a single buyer is buying products from many suppliers. The mechanism of forward auction

allows registered sellers to post their requirements on the electronic platform for bids. The sellers submit sale quantity and the floor price in the electronic platform. The buyers taking part in an auction submit their buy bids along with the quantity. Buyers and sellers during the auction can reduce or increase proposed prices and quantities but not during last five minutes of the electronic auction. At the end of the session, the electronic platform system automatically match sale orders with buy orders at the highest price of the submitted buy orders, provided that the buy order price is higher than the price submitted by a seller. The process is quite different in the case of the reverse auction system. In the mechanism, the registered buyers post their requirements on the electronic platform for bids. The electronic system allows a large number of buyers to submit their bids. The stronger the competition between the bidding sellers, the lower the value of the proposed bids. The seller whose bid meets the buyer's best value requirements would sale his products. The electronic reverse auction is allowing market participants to take part in the dynamic way of settling price. The real time competition of sellers is resulting in significant cost reduction and improves process efficiency of agricultural raw material procurement in enterprises.

The electronic exchange NSEL also offers to its participants a customized procurement services. The procurement services are created in the way that meet the sophisticated, individual purchase requirements of processors, manufacturers, government agencies, private companies, exporters, private brokers and other institutions and organizations that want to improve their procurement processes. For electronic procurement processes support, the electronic marketplace charges 2% fees from the buyers. The very important feature of the procurement electronic system is that it enables buyers to source the products directly from the farmers using the electronic system of NSEL. Therefore the systems enables buyers to integrate vertically their processes with farmers. The significant benefits from the electronic procurement system offered by the electronic marketplace are:

- allowing producers, exporters, government agencies, backward integration with farmers, without any need for additional investments in electronic commerce information systems;
- organizations in India have the ability to reduce costs of sourcing raw materials;
- the electronic exchange offers customized electronic procurement collateral solutions,
- efficient desktop monitoring of entire procurement process;
- guarantee for quantity, quality and payment in the procurement of raw materials.

The electronic exchange enables market participants to conduct safe and secure transactions of selling commodity to buyers based anywhere in India. The Exchange also provides an electronic mechanism for realization of timely payment. The electronic market also undertakes promotional activities to build awareness of buyers. Therefore NSEL enables sellers to expand their market reach and to increase their sales.

What improves operation of the electronic marketplace is the net of warehouse facilities that are placed at important market locations in India and are accredited

delivery points. The warehouses are hired and managed by NSEL and are approved by financial institution for warehouse receipt funding. All the warehouses and facilities are located in convenient places connected with high level of roads, transportation and with access to labor. Storing in the warehouses gives farmers the ability of quality certification, grading, transportation facilities and insurance of stocks.

The National Spot Exchange has many features that may be of great advantage both for sellers and buyers:

- The electronic marketplace offers very efficient price discovery at the national level
- It allows better price realization for market participants
- The electronic market is increasing bargaining power of farmers
- Better price information and market analysis reports for the whole country market
- Warehouse receipt allows farmers for bank loans and credits
- Integration of the fragmented agricultural market in India using electronic solutions
- Reduction of the number of intermediaries on the agricultural market in India
- Electronic marketplace provides quality certification, standardization and grading of commodities
- Safe trade and payment system provided for the market participants by electronic means.

Conclusions

The described above cases of the Internet selling of agricultural products show that there are significant differences in the selling of agricultural products on the Internet. Every presented case is quite different in many features. The first and the second case refer to the situation when farmers sell their products via their own websites. In the first case the farmer sales relatively not perishable product that is honey. The second case is referring to the selling of citrus fruit. However citrus is relatively less perishable comparing to such fruit like strawberry or raspberry. The two internet selling cases show that farmers are able conduct direct marketing for their products using their own websites. Despite relatively high cost of postal dispatch, customers buy the products on the Internet because, from the customers viewpoint, the value offered by farmers is higher than value of products bought at the traditional retail groceries. Farmers are able to generate profits despite costs connected with maintaining and promoting the store website. It is possible because they avoid intermediaries that usually have high margins that decrease farmers, profits. Moreover, a great advantage is that the farmers learn the new channel of selling products and get experience. This can bear fruit in the future when buying food online becomes more popular. The farmers treat the internet as another, alternative channel for selling their products.

The next two cases (Home Grown Cow, Locally Grown) are examples of electronic shopping centers (electronic malls) of agricultural products. The electronic malls enable farmers to post information about their products. Using the electronic malls, farmers do not need to maintain and promote their own electronic stores, because all the marketing efforts, receiving of orders and enabling payments, are conducted by the electronic mall. However farmers have to pay commissions that are percentage of sales realized through the electronic mall.

All the four presented examples of the B2C selling type show that farmers make efforts to offer customers the value that is difficult to offer by traditional retail shops. The value can have many sources such as: easy to identify origin of products, the fact that the products are grown locally, customer choice of preferred production method, exceptional product quality (connected with taste, organic production). Most of the presented B2C cases show that farmers using the Internet sell products for niche markets such as local society, customers of good knowledge on food quality, customers that look for unique product features.

The last two cases are devoted to B2B sale of agricultural commodities. Two electronic marketplaces of agricultural commodities were presented (IGT electronic platform operating in Poland, and NSEL electronic platform operating in India). Both electronic exchanges provide many market possibilities and functions for farmers. They enable farmers to find new customers and to broaden market reach. The electronic B2B public marketplaces also enable to avoid intermediaries on the agricultural commodities market and contribute to the more efficient price discovery at country level. The electronic marketplaces are also introducing services connected with supporting supply chain activities.

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Summary

The paper discusses examples of the Internet usage as a marketing channel for sale of agricultural products. The paper includes Polish and foreign case studies with description of various forms of electronic sale, both of the B2C and B2B types. The paper discusses operation of various electronic marketplaces and electronic stores of agricultural products. The author also listed advantages and benefits of using electronic agricultural marketplaces for farmers and customers.

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