New Directions in the Science of Commodities

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Abstract: Knowing the goods is one of the fundamental exigencies of the contemporary man who, as a consumer, represents the final consignee of the production activity. The name it bears even tells us this is a science, a science that has a quite rich history.

As it happens with other sciences, the science of commodities was, is and will continue to be in the attention of the specialists in production, distribution, commerce, tourism and logistics since the negociations between the business partners (this including the consumers) can only take place in the context of a good knowledge of commodities, of qualities and of satisfying the clients' needs and expectations.

Its interdisciplinary and multidirectional character has lead to new directions in the contemporary science of commodities through: the ecological science of commodities, the social one, calimetry, the commodities expertise, studying the product's life cycle, including the impact its utilization has on the environment.

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The object of the science of commodities has continuously evolved, both in form and in content, but its essence has remained constant even from the first books of the pioneers of this science, in Italy (Balducci Pegoloti) and Germany (Johann Beckmann). In the first textbook on the science of commodities that appeared in Romania in 1885, professor Arsenie Vlaicu defined this science as being the "study of the origins of products, of their essentially chemical and physical properties, of their authenticity and quality indexes, as well as of the methods used to establish these qualities and to discover the deterioration and falsification of the merchandise".

The importance of knowing the science of commodities has been synthetically expressed by the Japanese professor Yoshiro Iijima. "the education in the science of commodities has contributed a lot to commercial education and to industrial development in Japan, playing an important role in the field of internal education, of the education of the consumer and generally speaking, in social education."

There are a lot of significant proofs of the international acknowledgement of the importance borne by the science of commodities:

- Starting from 1975 there appeared the International Association of the Technology of the Science of Commodities, with its headquarters in Wien.
- There are national associations of commodity studies in many countries of the world
- There are several publications in this domain: Forum Ware, IGWT, Studies of commodities, Japan , Italy
- There are faculties and specializations in the science of commodities in many Universities from Italy, Japan , Austria, Romania, The Republic of Moldavia, Poland, Russia, Ukraine
- The science of commodities is studied both in schools and universities
- It is a specialization for doctor's and master's degree
- The study of commodities is and has been part of numerous international scientific manifestations

Nowadays, the science of commodities heads to the following main directions in research:

- The multi-directional research of the goods (from a technical, economic, ecological and social point of view)
- The research of the goods all along their trajectory, considering even the phases before and after their utilization
- Engaging in activities meant to form the ability to differentiate goods according to their quality, etc.

The thematic of the international study of commodities deals with a great variety of issues, like: defining the contents of the categories of the science of commodities and of the quality study, the connections between the science of commodities and other sciences, classifying the types of goods according to scientific criteria, modern methods of studying the merchandise, the implications that the usage of synthetic raw materials have on quality, the implications of the latest technologies, raw materials and packing techniques, marking and labeling merchandise, finding out the fakes, the relation between quality and environment, packing and environment, product and environment, consumer and environment, quality and consumer, certification, expert examination and checking on delivery.

The science of commodities is a domain that is eminently practical and interdisciplinary, allowing correlating the natural reserves and the stocks of raw materials with technological progress and the production capacity, with the economical development and environmental issues, offering elements which are indispensable when making rational and non-emotional choices between the goods that are sold on the market. The domain of the science of

commodities is closely connected to the evolution of goods and the methods of turning to good account contemporary merchandise on the market.

Nowadays, in the science of commodities, conceptual and methodological reshaping take place, a special importance being given to promoting an integrating vision of the product.

This means, first of all, a multi-directional approach of the goods, taking into accounts not only the technical and the economical aspects, but also the social and ecological implications of the products and of the logistics. Normally, the science of commodities is more and more oriented towards studying the products all along their trajectory, paying attention even to the pre and post existential phases of the product.

The interdisciplinary and transdisciplinary character, the multidirectional research introduced in the modern study of commodities are concepts that are shared nowadays both by worldwide known personalities like G.Grundke (Germany), W. Ciusa (Italy), J. Holzl (Austria), G. Nebia, C. Calzolari, O. Gekeler and so on, as well as by the Schools of commodities studies created by ASE Bucharest and UCCM Chisinau.

The thematic approached by the study of commodities is very wide and is at the boundary of mannier classical and modern disciplines, from which it takes concepts, methods and techniques of analyzing quality and the type of products that are being sold, adapting these methods to its domain of study. The science of commodities will live as long as there will be merchandise on the market, hence….forever. (Stanciu, 2002). According to the Italian Encyclopedic Dictionary “contrasting the simplicity of its name, the science of commodities is one of the most complex and wide sciences”. Therefore, commerce is done with merchandise, and merchandise is studied by the science of commodities. Approaching merchandise in a bi-component system (product-pack) or three-component (product-pack-environment) amplifies the conceptual and informal message of the science of commodities.

The modern orientation of the object of this science is circumscribed in the field of knowledge that is directly or indirectly connected to the quality and class of products.

In the past twenty years important progress has been recorded in the field of defining and solving the practical aspects of improving, standardizing, certifying, providing, guaranteeing, analyzing, assessing and presenting the quality of products and logistics.

The amazingly rapid evolution of the internationalization and world-wide opening of the market, through the most complex forms and structures, also brings along new problems of notional and terminological communication, regarding ecological products and packs, environmental safety, durable evolution.

According to the diversification and growth of the complexity of the products, of the pointing out of the interdependence between merchandise, man and nature, the new science of commodities has taken into account new implications of the merchandise, such as the social and ecological and even juridical ones (this meaning respecting the consumer’s rights, the settlement and standardization aspects, the guarantee and the certification, etc).

From the multiple aspects of the new science of commodities we shall approach the ecological science of commodities, as a new domain of the contemporary one.

As expected, the consumer-oriented “green” movement has urged the amplification of the preoccupation the science of commodities has regarding a certain category of products that is the ecological ones. Hence, marketing did not remain behind and developed the ecological marketing. Moreover, the educational system introduced in its curricula the problematic of environment: the management of the environment, environmental strategies, the management of the wastage, durable evolution, ecological products and logistics, etc.

It is obvious that we need ecological products, but we must take into account both the advantages and the disadvantages (costs, influences, lack of education) the ecological

product is still hard to “control”. And here we mean the fact that very few products or logistics are fully ecological (not even the products used for recycling are completely ecological) and between the intention and the practical activities there still is a phase difference. At the international level it can be seen that the scientists have noticed that there is a global problem of health and environment, and they want to do something in this respect. The experts in commodities have already started their research in aspects regarding durable development in two directions: the ecological impact of the existing products and packs and the study of new, ecological products.

A fundamental change of perspective must be made also regarding the consumer’s opinion. Their ecological awareness wills determine restatements in the usual problems of the science of commodities, marketing and management, and even politics. The actual manifestation and inducement of the request for ecologic products and logistics is done by informing the consumers through a process of continuous communication between the company and the market, so that, step by step, the consumer will change his usual behaviour becoming a responsible consumer. Europe’s Plans for Environmental Actions mention the social utility of the consumer, thus naming his responsibility for present and for the future. Referring to the companies’ responsibility towards the environment, Hawken (The Ecology of Commerce. A Declaration of Sustainability,1997) mentions three types of activities: what do companies take, produce and waste. What they take refers to the raw materials and the resources they take from the ecosystem. What they do deal with the products and the services they obtain and offer for commercialization and that can affect the environment. What they waste are the ecological costs, defined by the collective costs associated both to the businesses and to the clients, and to the company as a whole. These are: pollution, wastages, the depletion and the destruction of the natural system.

The ecological science of commodities already comprises some food, textile, cosmetic, chemical and electrotechnical products, and so on. Nowadays, attention is mostly payed to food products, but we are far from having approached all the range of products and the problematic of the science of commodities related to the environment.

Nowadays, the sixth generation of food products is coming out. These are the ecologic products.

The evolution of the food product from the natural one, more or less physically, chemically or biochemical modified to the complex food product obtained through new technologies, non-conventional raw materials, ultra-refined substances and chemical additives was accompanied by the apparition of unwanted metabolic effects induced by by food disequilibrium.

This has lead to the act of becoming aware of the importance of the act of nutrition and has also determined the consumers and the producers to focus on foods with a declared nutritional value and as biologically pure as possible.

The need to stimulate the action of producing, processing and selling “bio” products has opened a new preoccupation to the science of commodities, this being the science that studies merchandise as assets to be used.

Today, the ecologic food products are considered new products, even if some of them have existed before. The farms and the companies must change their technology, their conception and their standards. The specialists even describe a possible “conflict” between the ecologic food products and the technical-scientific progress based on chemical substances of synthesis, genetically modified organisms, processing technologies based on irradiation, etc. ecological agriculture means going back to nature, life, natural organic raw materials, the elimination of any polluting technique, continuous sustain and improvement of the soil’s

natural fertility. The “bio” food products are exclusively natural, obtained without using fertilizers or pesticides, they wholly respect the biological and ecological processes, and, consequently are certified by accredited organisms (a third part), having this certification written on the label.

The scientific progress permanently offers new technologies even in the field of food products, thus contributing to the spectacular increase of the number of new products. In 2007 there have been signaled 20 000 such products, but many of them are not natural.

The problem that still hasn’t been solved refers to the consumer’s right of being informed and educated.

Significant segments of consumers start to focus on food products as biologically pure as possible. These can be found under the name of ecological or organic products, even if there are quite delicate terminological differences between these notions. As we have mentioned several other times, the ecologic products are natural products, whereas the natural products are not always ecological if they result from a polluted environment, or if they pollute (this is the case with petrol)

However, in real life, sometimes there are confusions between the natural products’ market and the one of the ecologic products. Not everything that exists in nature is ecological. Hence, the biological foods are exclusively natural products, obtained without the use of fertilizers or pesticides, respecting the biological and ecological processes entirely and are, consequently, certified by an approved body (third part) in order to have a “bio” label, which acknowledges the fact that they have been obtained according to the standards of the biological agriculture.

However, obtaining a diversity of 100% biological products is very hard. According to the American standards, we can speak about four categories of biological products: *100% biological* (meaning the products with 95% of their ingredients produced biologically, a percentage reported to the weight of the product), *prepared with biological ingredients* (they contain more than 70% biological ingredients, but a maximum of three components produced biologically can be specified on the label of the product), *transformed products* (they contain less than 70% biologically produced ingredients, and the term “biological” cannot be written on the label; however, the biologically obtained components can be specified in the list of ingredients on the pack).

Nowadays, the consumers are more and more attentive to the products they consume, thus working in the benefit of their health since ecological food products have a superior hygienic value, are highly innocuous and are richer in mineral salts and vitamins. The consumers want to “feel” the taste of the products. For example, the plants that are grown biologically respect the sequence of the seasons, are ingathered at their maturity, a thing which gives them a flavour that is impossible to obtain through any other type of bacteria. And last but not least, the consumers of biological products support the health of the planet and also our health, by demanding the respect for nature. Combining the ecological factors with the process of alimentation is a premise of the growth of alimentation safety and of durable development.

The status of the ecological food products is partially settled. From 2007, the producers from Romania must provide the tracing of the product according to the concept “*from farm to fork”* and the other way round “*from plate to source”.*

The procedure of the study applied by the science of commodities is very important when dealing with these products. The rules stipulated in the current settlements are meant to guarantee the consumers that the ecological products have been obtained according to the legal dispositions and that they have obtained the compulsory certification.

The sixth generation of ecological food products can be characterized by:

- A highly nourishing value, at least regarding hygienic and biological factors;
- Chemical contents with no genetically modified organisms or any of their derivatives;
- The creation of new products;
- Post usage ecological values
- High level of satisfying the consumer's demand.

Moreover, the textile market has started to focus more and more on ecological products. The "smart" eco-textiles are both environmental and human "friendly".

The ecological management in the textile industry is pointing out the purpose of the natural raw materials, but also of the synthetic ones, as a source for supplementing the need for natural textile fibers.

In the past years, special attention has been given to the products that human skin tolerates: baby clothing, bedclothes, linen, table-cloths, feather-beds, blankets, bath towels, etc. when analyzing the toxicity of the textile products, four categories of toxic components that may cause allergies and even cancer have been discovered. These are found in the components used to dye the products (that is why , white products are recommended, especially for children), in the solution used for the anti-creasing treatment of the cloths (this substance is the formaldehyde, whose maximum content was established by "Eco-Tex Standard 100" to the maximum value of 1%) PCP (that is the pentachlorophenol encountered in the substances used for treating the cotton crops) heavy metals (lead, nickel, cadmium and mercury, often found in some accessories or finishing substances).In some countries the use of these products has already been limited.

The cloth that contains toxic chemical substances emits in the air particles that can cause serious skin and eyes irritations, breathing difficulties, and in some cases, formaldehyde is a cause for cancer. Even though there is no legislation regarding the use of chemicals in the textile industry, the ecologic labels (Eco-Tex 100) mention the maximum amount of formaldehyde that is permitted.

A direction which is hard to control is the one of the pack: packs as waste products (nowadays, over 50% of the waste products come from packages) and the ecologic pack.

The development of the ecologic science of commodities, as part of the science of goods, shall lead to positive effects concerning:

- The improvement of the population's health
- The correction of the lack of balance in eating habits,
- The nutritional and ecologic analysis of the products
- Improving the relations *individual-product-environment, pack-environment*, in order to achieve environmental safety
- Developing ecologic products and logistics.

These characteristics can become advantages. However, some disadvantages will also show up: the inequity (not all the consumers can access the ecologic products or a culture of the ecologic products), high prices, increasing exigencies regarding certification near to the ones used for pharmaceutical products, the possibility of forging the products and tricking the consumers.

Certainly, the science of commodities shall not solve the situation regarding food products or the world's ecologic crisis, but we must emphasize the fact that these problems cannot be studied separately, and that the science of commodities is one of the sciences that shall get involved very seriously in this aspect.

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