June 20, 2011 (Monday) Pre-Congress Seminars

Ministry of Rural Development **Kossuth Lajos tér 11. Budapest V.**
CONFERENCE ROOM **Monday 10:00 – 18:00**

1.3. NEW QUALITY AND SAFETY REGULATIONS AND DEVELOPMENTS ON THE AGRIFOOD AREA

Seminar Chair: Zoltán Kálmán, Ministry of Rural Development, Hungary

14.00 The Role of Quality Assurance Systems in the Hungarian Food Industry
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The Role of the Quality Systems in the Hungarian Food Industry

József Popp – Anikó Juhász[1]

Abstract

Hungarian food industry in the last two decades experienced a rise in the number and penetration of quality systems. The obligatory and independent systems of HACCP and ISO 9000 have almost lost their market value simultaneously with their penetration in the industry. Due to the increase in the buying power of the food retail trade, quality systems required by large customers (e.g. IFS, BRC) have already become the minimum (qualifying) condition of market entry. The current trend of "one system - one customer" makes the rationale of quality management integration into one system (e.g. ISO 22000) questionable. The quality systems widely implemented in the Hungarian food industry have without doubt contributed to the improvement of the safety dimension of Hungarian food quality. On the other hand the current accumulation of systems does not lead to quality improvement anymore, while using up significant human and financial resources of the Hungarian food processing enterprises.

Key words: quality system, food industry, supplier and buyer relationship

1. Introduction

Today it is difficult for the agro-food suppliers because: the Hungarian retail market is concentrating and saturated Retail formats outside the modern supply chain – e.g. independent shops – had in 2000 the share of 42% from the FMCG shopping activity of Hungarian consumers. In 2009 this non-modern format category only gave 23% of the FMCG sales with a further assumed decrease to 14% in 2013. Another very important and for the Hungarian SME (small and medium size enterprise) suppliers warning tendency is the rise of hard discounters (Aldi, Lidl) while these format use PL (private label) products – dominantly imported from Germany – as the basis of their corporate strategy.

In the CEE (Central and Eastern European) countries such as **Hungary** since the political and economic transition (the beginning of the ninetieth) **the structure of food retailing became similar to that of the developed countries**. The major international drivers and trends of modern food supply chains were true for the development of the Hungarian agri-food market as well. Thus the Hungarian food suppliers also experienced [Vermeulen et al., 2008]:

- imports becoming price and quality setter,
- retail buyer power starting to dominate,
- production turning to be buyer-driven,
- increasing barriers to market entry (capital, technology, organisation, scale, finance),
- and the emergence of collaborative business models.

The quality features to be complied with by the food products have evidently multiplied. Beyond search attributes (freshness, appearance) and experience attributes (flavour, shelf life) easily appreciated by consumers, several features which are hard or impossible to judge from the product by the consumer have been added, such as credence

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attributes (nutritive value, safety), ethical attributes (animal welfare, environmental protection) and religious attributes (muslim, jewish, hindu). Simultaneously, the requirement for the creditable certification of the quality features has increased. The real problem on the other hand was not the process itself but the pace of it being much more rapid leaving less time for the suppliers to adapt to these new circumstances (Table 1).

Table 1. Timeline of the Hungarian grocery retail sector and the effects on the supply chain (1989-2010)

Period	Date	Retail market structure
Privatisation	1989-1994	Number of independent small shops increase and the first FDI appear in the supermarket and cash & carry segment.
Interim years	1995-1999	Increasing role of modern retail formats and development of retailers' power in the supply chain
Accelerating competition	2000-2004	The dominance of hyper- and supermarkets form, independent shops join the domestic „franchise" chains (CBA, Coop) in masses. Slowly maturing market.
„Hard" times	2005-2008	Number of shops (small independent) start to decrease. Hard-discounters appear as new competitors
Even harder: crises years[2]	2009-	Rise of hard-discounters. Market redistribution: consolidation of CBA and Coop, first major acquisition of a post-transition chain (Plus).

Source: Juhász [2011] based on Juhász – Stauder [2005]

Parallel to the **changing retail structure the producer-retailer relationship** has changed radically „shocking"suppliers. In the **privatisation period (1989-1994)** improving search and experience product attributes provided competitiveness advantage for suppliers. Consumers were hungry for the ever growing number of SKUs: shelf unit… („everything may come") after decades of limited assortment. There were no organized distribution networks of retailers and in this infant market period retailers were forced to take on risk and vertical coordination tasks in the supply chain.

In the **interim years** (1995-1999) good search and experience attributes became general and minimum requirement for suppliers in the modern retail formats. Consumer demand for strong producer brands increased. Country-wide direct-to-shop or to a few regional distribution centre transport was required from the suppliers. Import was still controlled by tariffs, even imports coming from the EU. In **accelerating competition** years (2000-2004) good credence values (certified) became competitive advantage for suppliers. PL products started to gain market presence. Retailers' regional and country distribution centres were built. Tariff protection against imports from the EU-15 was decreasing. Buyer power of retailers started to have effects on risk and responsibility sharing with suppliers.

In **„hard times"** years (2005-2008) good credence values became qualifying minimum for the suppliers, ethical values became the new competitive advantage. PL products developed and triumphed in consumer acceptance. Tariff-free trade with 24, then 26 European countries boosted imports [Juhász – Wagner, 2009]. Centralized distribution centres and on-line procurement entered the supplier-retailer „game". Affordable consumer prices and

[2] See 3. Annex

horizontal price war became the centre of retail strategy. Risk and responsibility passing to suppliers became the norm as buyer power of retailers peaked. PL market development made supplier substitutable and looking at the developed countries the PL market is far from being saturated. In the still on-going **crises period** (2009-) all the „hard times" characteristics are valid for suppliers but the negative consequences of economic crises makes the supplier-retailer relationship even tenser. PL products gaining more ground and price war increases.

2. Methodology and data

The concept of quality assurance broadly includes all the expressions which are linked to the theme: national and EU regulations, certification and labelling systems, as well as the B2B quality assurance and management systems, or B2C trademark labels with real marketing value. In order to narrow the subject of our study we determined one main factor, namely the issue of volunteerism. We analysed only quality requirements or standards which are voluntary. The binding requirements set by any level of the public administration or officially controlled quality standards, i.e., binding standards, regulations and requirements (Mandatory Standard or Regulation), were not considered to be the subject of study. During our research we tried to answer five basic questions:

- RQ1: Food safety and quality advantage: To what extent do quality systems contribute to the definition of the product quality?
- RQ2: Minimum requirement of market access or marketing advantage: What are the marketing benefits of the different systems?
- RQ3: Effects within the vertical relationships in the food chain: How is the expansion of the quality systems influenced by the differences in power, existing anyhow?
- RQ4: At the horizontal levels of food chain: Is it possible to discriminate the small and medium-size enterprises and force them out of the market with the help of the certification systems?
- RQ5: The role of the food chain's control: What is the impact of the controlling organisations performance on the quality system compliance of the Hungarian food industry?

From the possible methodological tools, we have applied special trade literature review, homepage analyses and structured in-depth interviews with experts in respect of all issues concerned in the study.

In the first part, analysis of the homepages of the different system developers, certification organisations and food industrial enterprises, as well as processing of the related legal regulations were emphasised. According to the homepage analysis of the domestic food industrial enterprises, only 14% of the enterprises were present on the internet, but were responsible for 62% of the net sales. The number of companies publishing information on quality systems amounted to just 7% of the total number of enterprises, but they realised 46% of the revenues (See Annex 1.).

In the second part, the methodological basis constituted a survey conducted among food supply enterprises and its statistical analysis. In order to investigate the practical experiences of the food economy sector we have carried out 26 interviews (See Annex 2.). As the quality assurance systems concerns mainly the food industry, the vast majority of our interviews were conducted with food industrial companies (24 interviews) but besides we visited two POs (Producer Organisations), too, as the most affected agricultural stakeholders. During the composition of the interviewees we tried to choose firms from the widest circle, possibly from every sub-sector of the food industry. Our second standpoint was the good representative sample from the point of view of company size (we chose larger firms as they

represented well the sub-sector but also small companies), the third factor was the quality strategy of the firms, meaning that we tried to interview companies which declare that the quality of their product is very important objective for them.

There are five poultry- and meat processors, five fruit and vegetable processors, two companies producing spices and seasonings, three dairy processors, three bakeries, one producer of cooking oil, two mineral water packer and two wineries in our sample. Considering the size of the interviewed companies cc. 50%-50% was the rate of bigger and smaller firms. The companies with the highest turnover work in the meat industry, milk, and fruit and vegetable processing. The smaller firms represented the bakery sector, cooking oil and beverage producing. Despite our systematic criteria our selection method is considered an arbitrary selection as the interviewees do not represent exactly the Hungarian food industry. Nevertheless, we think that their opinion is a good starting point because we could collect the experiences of those experts who had met with many quality systems, within them the strictest ones, used consumer quality systems which were not widespread in Hungary and/or produced products which were sensitive from the point of view of food safety.

We have used a pre-structured questionnaire but we had a lot of „open questions" where our respondents could give their opinion freely. As the freely expressed answers of the experts and the quality culture of the related companies which could be judged personally were important aspects, we carried out personal face-toface interviews, visiting the firms and organisations.

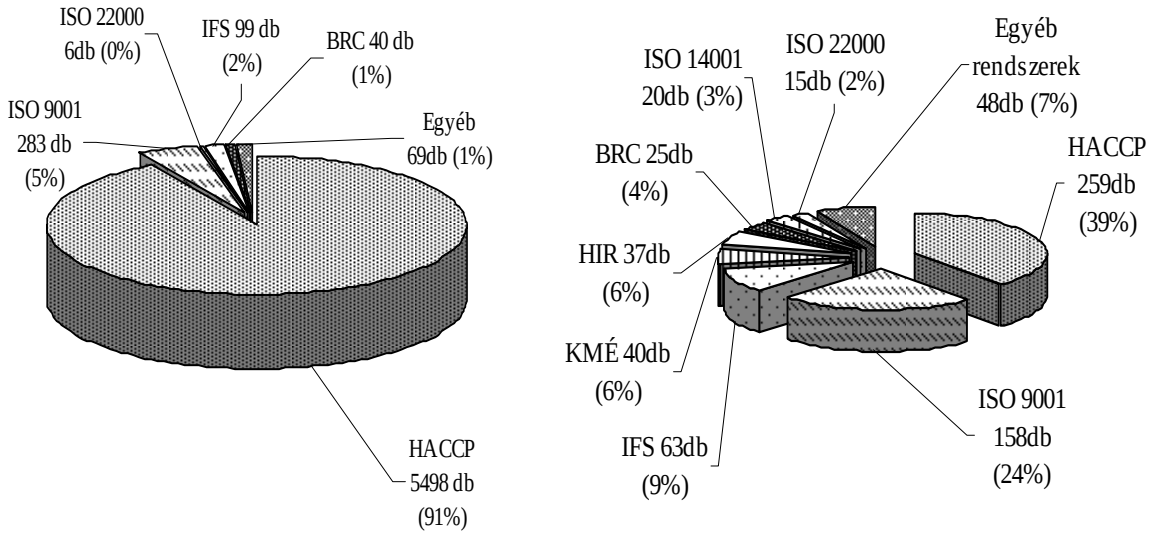
3. Results

3.1. Number and importance of quality systems in the Hungarian food industry

We summarised our firm-level data base about the quality assurance systems in every sub-sector and so we made it comparable to a previous data collection carried out by Ministry of Agriculture and Rural Development (MARD) (Figure 1).

Figure 1. Data on quality systems in the Hungarian food industry

2006 (MARD data) **2009 (Homepage analysis)**



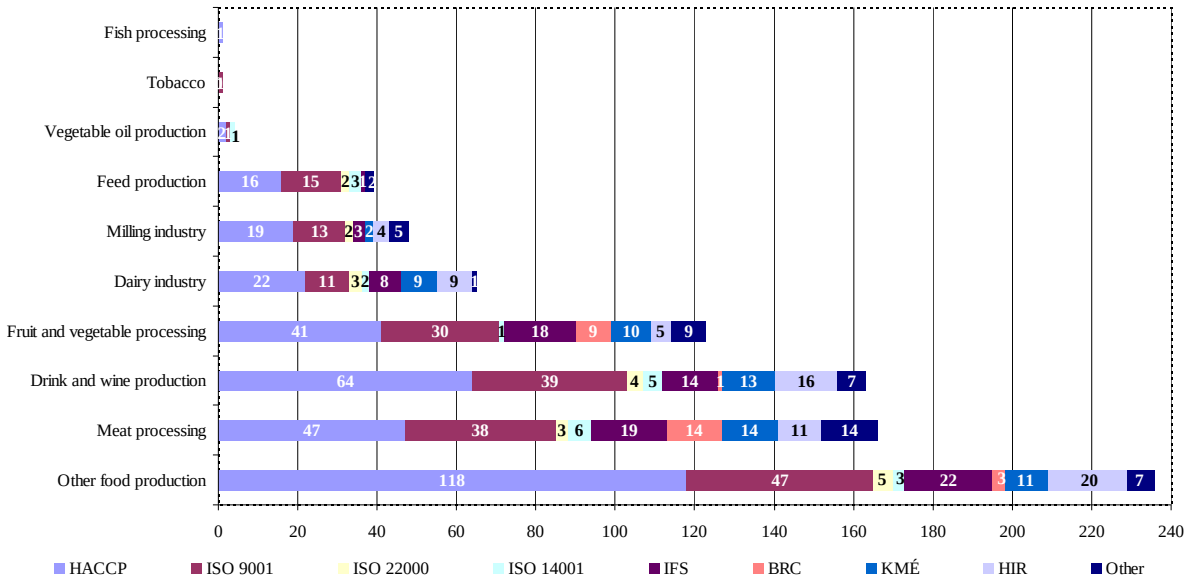
Source: FVM [2007] and own research of the homepages of the Hungarian food industry

Summing up by quality systems**,** the homepage analysis could identify for the most part the HACCP system, subject to legal obligation. ISO 9000 and IFS were second and third.

The BRC system was left behind by two consumer systems. Two consumer systems – the KMÉ (Kiváló Magyar Élelmiszer) and the HÍR (Hagyományok Ízek Régiók – "Traditions Flavours Regions") occupied the fourth and fifth places, with 8% each. The smallest share was represented by the ISO 22 000 system, and surprisingly, even the ISO 14001 environmental management system showed a higher share.

We carried out firm-level data analysis, too, which we summarised for every sub-sector and for the total food industry as well (Annex 1). In the aggregate we collected 869 system-related data, concerning 18 systems; the highest number of systems identifiable at a single enterprise was 9. According to our research based on the directory of food industrial firms of the year 2006-2007 from the registrated 5844 companies only 501, 9% had webpage. Investigating the existence of webpage we could create our basic population from where we could choose those companies which gave any information about the quality assurance systems used by them. The total food industrial data confirmed our premise that the quality assurance systems are more relevant in case of bigger market actors. The 405 firms which gave information about the quality assurance system used by them represented only 7% of the food industrial firms, but gave 46% of the net turnover of the sector in 2006-2007. We have collected altogether 869 mention of quality systems, relating 20 systems, the highest number of systems at one company was 9 (Figure 2).

Figure 2. Quality systems on the homepages of the Hungarian food industry



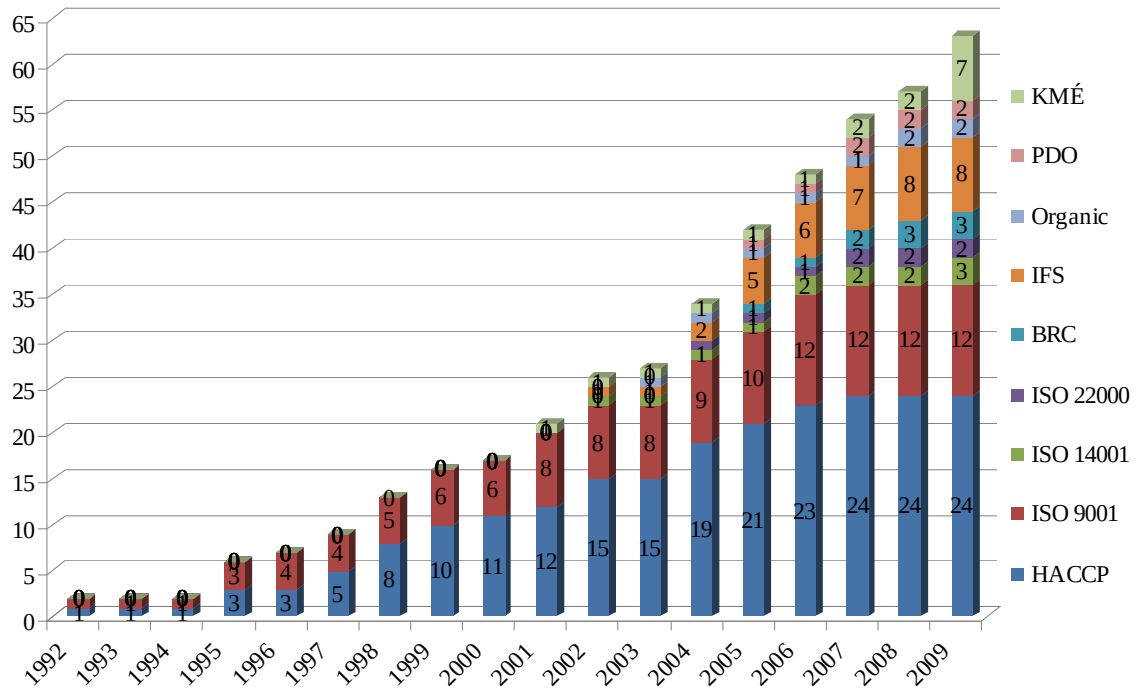
Source: Own research and calculation

Broken down into sectors, the extremely heterogeneous category of other food production, the meat processing, the production of drinks and the processing of fruits and vegetables can be considered as the most quality system oriented. From among the sectors with fewer companies, again three have excelled with a high rate: the dairy processing, the feed production and the production of milling products and starch.

3.2. The Hungarian food sector experiences of the compliance with quality systems

The interviewed companies has started to introduce the HACCP and the most widespread ISO 9001 (and its ancestor, ISO 9002) system in the beginning of 1990s. Today − as an evidence due to its obligatory nature − all the asked companies has HACCP and two third of them has ISO 9001 (Figure 3.).

Figure 3. Dynamic of quality systems of the interviewed food processing companies (1992-2009)



Source: Own figure and calculation

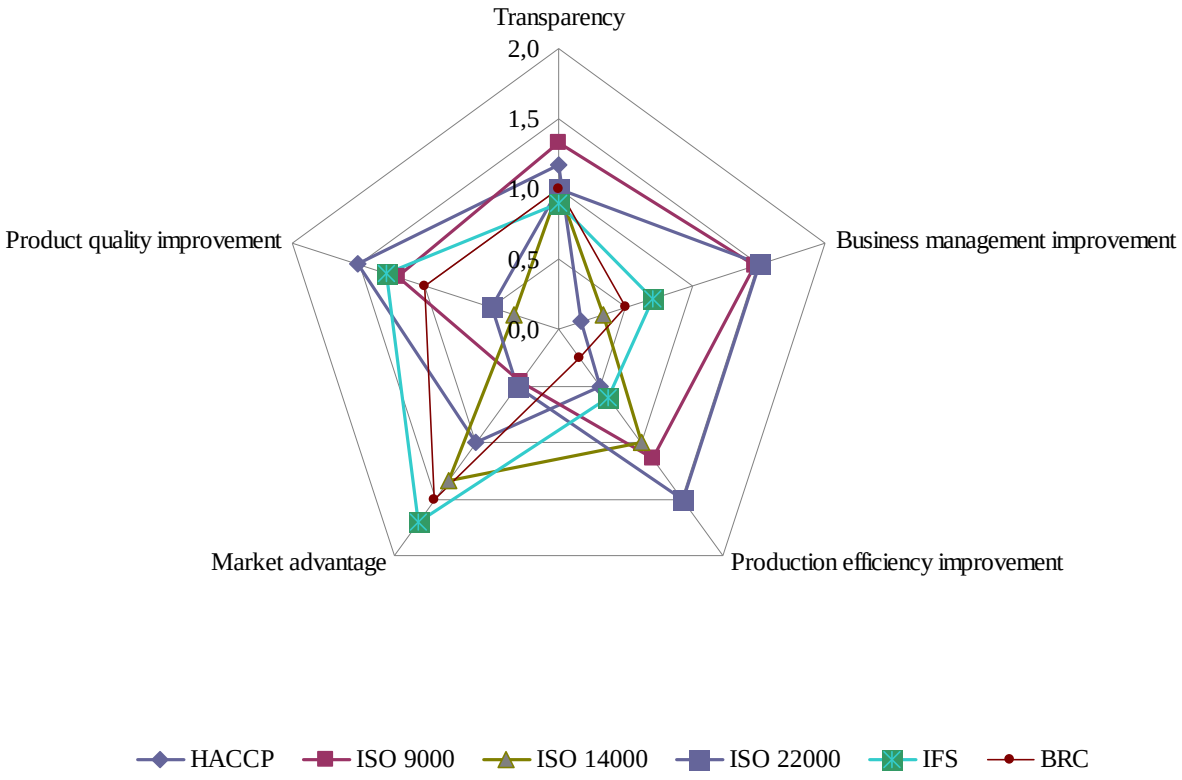
As regards the implementation, the interviews have showed that the establishment of the first quality assurance system required the highest rate of investment, but this usually occurred together with other technological and infrastructural or IT development projects. Approximately 80% overlap can be observed between customer and independent quality systems, showing that, with a proper corporate quality management system, compliance does not cause major technological problems and require further investments in this field. The burdens of the enterprises for the first systems were further reduced by the fact that for systems implemented at an early stage support could be still applied for.

Concerning operation of the systems, our respondents univocally indicated the costs of certification as the highest expenditure item, followed by the renewal fee and the costs of audits; wages and training costs were listed in fourth and fifth places. The introduction and operation of quality assurance systems usually has an impact on the duties of all employees of a company, all the same, staff expansion occurred only at a few of them. Companies with larger scale and long operation history usually already had food safety team prior to the introduction of the quality systems which could manage the implementation process of the new quality systems, while mainly smaller and relatively new companies referred to the employment of external advisors.

From the possible advantages the respondents mentioned the most frequently the "more predictable costumer relationship" (13 answers), after this "the reducing of quality complaints" (10 answers), "new domestic and foreign costumers" (9-9 answers), the less votes were given to increasing productivity, higher prices and trade. We also investigate the possible advantages in case of the different systems. Our respondents were asked to value the advantages according to a seven-grade scale[3] (Figure 4.).

[3] Seven-grade scale: -3: extremely bad, -2: very bad, -1: bad, 0: neutral, 1: good, 2: very good, 3: excellent

Figure 4. Quality system judgement of the interviewed Hungarian food processors (scale average)



Source: Own figure and calculation

The interviewed food processing enterprises have cited the followings as advantages of the customer systems: more predictable contacts with suppliers, clear determination of the responsibility limits, reductions in quality complaints and simpler treatment of claims and, the change in the quality management related personal attitudes from the top management down to the level of the factory workers.

It is important to emphasise that in total the rate of critical remarks was higher among our respondents. The B2B systems which could be considered as a basis (HACCP, ISO 9000) have lost value simultaneously with their spreading. The “one buyer-one quality system” situation which developed already due to such depreciation does not provide any added quality advantage, while implying serious additional employment and other costs for the food processing companies (certification tourism!). The ISO 14001 environmental protection system, introduced only upon external “pressure”, proved to be an exception. The companies already having this system evaluated it positively because it has significantly decreased the costs related to waste management; therefore it has been qualified as a rewarding investment even beyond the marketing advantages.

The spreading of the B2B systems fundamentally casts doubt on the integration and simplification through independent systems. A good example is the incidence of the ISO 22000, applied only by a few companies but mentioned by many more – mainly by large companies – as previously having plans for implementation, but withdrawing from it later, due to the growing number of retail partners requiring compliance with their own private standards.

According to our results the better product quality is assured by the so-called basic systems (HACCP, ISO 9001), but the respondents valued also from this point of view IFS and

BRC, too, as these system can improve the quality "with small notes". Firm productivity, management advantages are assured mostly by ISO systems, but from the point of view market value IFS and BRC was pointed to the first place.

Besides market value it was high lined that these systems brought a significant change in the mentality of the firm, meaning that these systems force the management to listen to the quality aspects during strategic decisions and during their daily work. Earlier this was not so important, but now, exactly because of the importance of the quality assurance systems the quality expert take part regularly in the management meetings, quality questions arises in these meetings both compulsorily and ad-hoc, the leaders decide quickly and all this resulted that quality and safety became an important field within the company.

A general criticism arisen related to quality system, that is, though some systems (especially HACCP, ISO 9001) are very good basis for assurance quality and safety, they became "diluted", lost their value since they spread among the smaller firms. The reason of this is that a lot of smaller firms only bought the documentation from outside advisory firms in order to meet the requirements but in reality they never worked according to the systems. This is why our respondents felt legitimate though unpleasant that their costumers always require new systems.

Based on our researches (literature and webpage analysis, firm interviews) we could make four main groups of the domestic food industrial companies from the point of view of usage of quality assurance systems (Table 2.).

Table 2. Segments of Hungarian Food Industry from the point of view of quality assurance system usage

	B2B systems	**B2C systems**	**Future requirements**
Multinational companies	Quality-culture is matured, internal company systems, ISO 22 000	Not specific, it is substituted by strong brands	Law and government predictability
Domestic large firms	Quality-culture nearing maturity, total compliance, though external motivation	Well selected (moderately used) a good marketing tool	Law and government predictability Investment and developement sources
Small and middle sized enterprises (SMEs)	Mixed quality-culture, depending on approach of the owner and requirements of the costumers, from mature to low	Can be the most important marketing tool	More information and education, Investment and developement sources
Micro-firms	Quality assurance should be based on personal responsibility and trust. Not a specific target group for quality assurance systems more apt for Good Practices.		Simplification of public administration requirements (laws, regulations, fees)

Source: own editing

Most problems were experienced by the **small and medium-size companies, established** around the time of the change of regime, having a strong, but not quality-oriented

management. The **successor organisations of the large food industrial companies** already operating prior to the change of regime had proper "foundations" with their food safety departments established due to the official control mechanisms then in place. The **enterprises established some years ago** already started up under the current system of conditions, while the **multinational enterprises** have brought along, as part of their corporate culture, an awareness of the importance of quality management.

The audit companies without accreditation that can presently be found on the **domestic certification market** raise fundamental creditability problems. The certification companies we have interviewed judged the **domestic food industrial enterprises** as generally well prepared and quality-oriented (with the exception of the participants of the black economy). In respect of the retail trade, the certifying organisations have mentioned as a negative trend that minimising of costs (prices) and risks (division of responsibility) constituted the determining criterion, while the internal content and sensory values of the products were not the focus of the quality systems. At the same time, they also mentioned as a serious positive argument that the modern grocery retailers initiated the quality certification procedure, filling some food safety gaps arising at the transition period of the changes (EU accession) of the legal environment.

4. Discussion

RQ1: Food safety and quality advantage: To what extent do quality systems contribute to the definition of the product quality?

The spreading of the B2B and B2C quality systems has undoubtedly contributed to the improvement of the safety dimension of food quality: they encourage the enterprises to establish more favourable hygienic conditions, implement traceability and continuous self-control and improvement of the production. However, the accumulation of systems does not result in remarkable quality improvement. The B2C systems are especially suitable for certifying – except for safety – the other quality features of the foodstuffs exceeding the minimum required level. Such quality attributes include: nutritional value, sensory qualities and conditions of production.

RQ2: Minimum requirement of market access or marketing advantage: What are the marketing benefits of the different systems?

The quality and purchasing strategies of the retail trade have undergone considerable changes during the last two decades. The good credence attributes and the B2B quality systems – increasing in number and becoming more detailed – have already became a minimum (qualifying) condition for market-entry. To join a B2C system does not necessarily imply high cost expenditures for suppliers on the other hand the development and exploit of marketing value of such systems require considerable resources. Furthermore, in our view, the developers of the evaluated consumer systems do not communicate in a sufficiently detailed and clear manner the distinctive quality features of their systems. Thus the additional benefits of certified products and the guaranties of such benefits are not communicated effectively towards consumers.

RQ3: Effects within the vertical relationships in the food chain: How is the expansion of the quality systems influenced by the differences in power, existing anyhow?

The future offers two alternatives: the number of B2B and B2C quality systems based on private standards may further increase, or the number of systems exceeds the manageable extent and a fundamental integration will start. Paradoxically, we found references for both possibilities but, in our view, the further proliferation would be the more probable trend. Due

to further increase of the buyers' power and to the vertical restriction requirement of the retail trade, the introduction of further B2B systems and increasing severity of the existing ones may be expected; at the same time, expanding of B2C systems is expected by way of defensive marketing reaction of suppliers.

RQ4: At the horizontal levels of food chain: Is it possible to discriminate the small and medium-size enterprises and force them out of the market with the help of the certification systems?

The requirement of customer and independent systems by the customers (modern retail trade and catering) may have an expelling effect, although this seemed much more as a consequence and not as the aim. On the other hand, the majority of the consumer systems supported by common marketing tools may directly imply market advantages for the small and medium-size enterprises, even though not necessarily using the modern retail trade channels. The resources required for preparing large numbers of documents may imply a huge burden on SME-s without proper IT support. The organisation of system trainings in the factory environment and with factory workers difficult to motivate constitutes a serious challenge. Creditability and competition distortion issues are raised by the fact that customers systems are not always and not equally applied to every supplier, because the purchasing managers of retailers are more "forbearing" with articles in great demand or with suppliers offering considerable price advantages.

RQ5: The role of the food chain's control: What is the impact of the controlling organisations performance on the quality system compliance of the Hungarian food industry?

Legal rules impose "result or goal requirements" on the food producers, which they can comply with the help of private standards providing "how to reach the goal know-how". An official audit establishes a one-time static condition/deficiency, while the certification checks a process/system; thus, it may for example help in finding and eliminating the causes of the deficiencies detected by the authority. It is however problematic that in several fields there is dual regulation, where references to independent standards are not integrated into the legislation. All enterprises surveyed have judged as problematic the frequently changing official approach and interpretation of the legal rules both in spatial terms (at national level) and in time. Smaller companies have mentioned also the difficulties of orientation among legal provisions, as well as the high level of the official fees and the lack of related support. Larger enterprises stated the company selection system of official audits as discriminative for their size range although, in their opinion, smaller companies are more likely to cause food safety problems.

5. Conclusions and recommendations

The strong increasing of the importance of retail, the more complex quality requirements and the formalization of mass distribution propagate the voluntary standards and private quality assurance systems, the number of controls are increasing dynamically. Only the firm-level,full and integrated quality systems can meet the requirements of the countless, but in a way very similar systems.

Based on our experiences we formulated three recommendation areas for the public administration. The first is the "fair play in public administration". The trading environment for all stakeholders in the supply chain would be encouraged by more helpful public administration, respect for existing laws by public officials and other stakeholders, and transparency in government measures. Investors should not be faced with unnecessary political risks through unnecessary government intervention. Measures aimed at increasing

quality standards for imports and exports, and stronger food safety regulations in general are to be welcomed, but such regulations should not simply be a "front" for trade barriers. Regulations should be more stable and more uniformly applied all over the country.

The second is the "development of quality compliance", directly concerning the food industrial enterprises could attach measures to three stages. As the first stage we suggest the introduction of programmes improving orientation, including e.g. training, special advising, preparation and distribution of information materials, covering preparation for the implementation of quality systems. The second stage, that of introduction, may be encouraged through investment support. Support for the third stage, that of maintenance, could principally include provision of resources required for the continuous follow-up of the quick technological development of the IT field. In our view, direct cost support for the audits of the independent and customer systems could only be granted in a very cautious manner, taking into account that both system implementers (retail trade) and system auditors (certifying bodies) are organisations operating on a market basis.

The third is the proposal of "consumer awareness improvement" to be very important (indirectly supporting our food economy), due to the fact that this is the most important market protection possibility of the domestic food economy under the EU and WTO regulations. Among adults, widespread and plain educational information on food labelling, trademarks and quality should be emphasised according to our view. As regards consumer awareness improvement of children, a fundamental change of attitude would be required; due to the general social benefits of the objective, it should receive special public support! A remarkable improvement of the current situation of the catering of public education – with active participation of the food economy (companies) – is considered to be the first and most important step!

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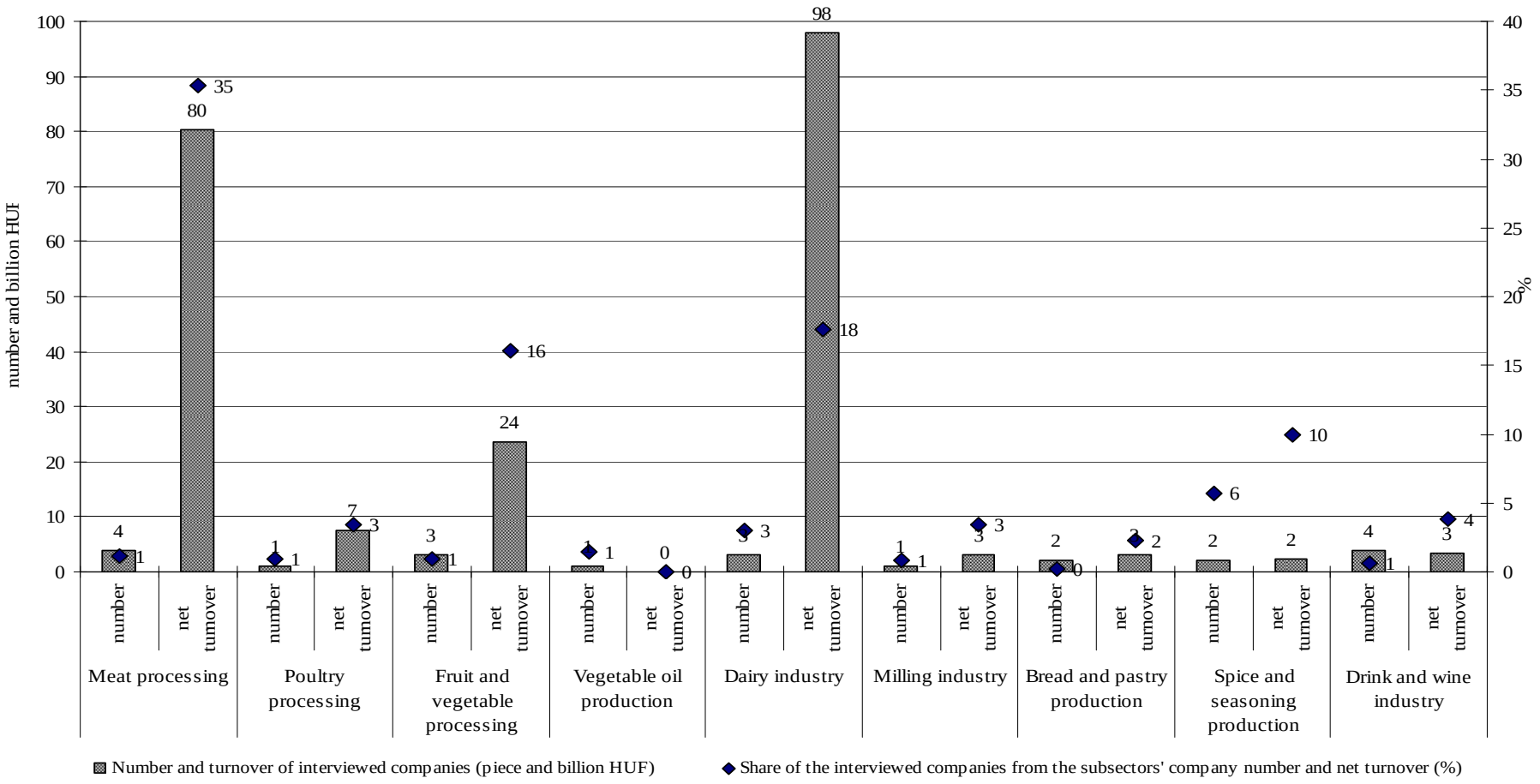
Annex 1. Information related quality assurance systems in the homepage of domestic food industrial firms and system administrators

Sector	Information on quality insurance		Quality assurance system, altogether	Number of type of quality systems	Maximum system number at one company	Top-3 systems*
	Number of firms, (%)	Net turnover, billion HUF, (%)				
Meet processing	58 (8)	310 (57)	170	15	9	ISO9001(38), IFS(19), BRC(14), KMÉ(14)
Fish processing	1 (0)	0 (0)	1	1	1	ISO 9000 (1)
Fruit- and vegetable processing	55 (11)	109 (51)	128	12	7	ISO 9000(30), IFS (18), KMÉ(10)
Plant oil and animal fat processing	3 (3)	65 (36)	4	3	2	ISO 9001 (1), ISO 14001 (1)
Milk processing	27 (18)	153 (67)	67	9	5	ISO 9000 (11), KMÉ (9), IFS (8)
Milling industry, strach production	20 (10)	90 (72)	48	8	5	ISO 9000 (13), HIR (4), MagyarTermék (4)
Feed industry	21 (8)	34 (21)	41	7	4	ISO 9000 (15), ISO14001 (3)
Other food processing	135 (7)	63 (14)	243	12	6	ISO 9000 (47), IFS (22), HIR (20), KMÉ (11)
Beverages	85 (6)	298 (69)	166	12	6	ISO 9000 (39), HÍR (16), IFS (14), KMÉ (13)
Tobacco	1 (0)	14 (9)	1	1	1	ISO 9000 (1)
Food imdustry	**405 (7)**	**1 136 (46)**	**869**	**18**	**9**	**ISO9000(195),IFS(85), HIR(65), KMÉ (59)**

*without HACCP

Source: Own table from the results of the homepage analyses

Annex 2. Introduction of the interviewed companies in the average of 2006-2008 (number and turnover of the interviewed companies and their share from the subsectors)



Source: Own figure from the results of the interviews