
The emerging food-safety industry in Russia

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Abstract

The roles of government and the private sector in the provision of food safety in Russia are explored. The establishment and operation of a private food-safety company are described and its competitiveness is analysed in the context of the evolving food-regulatory, policy and economic environments found in a transition economy. Business success is attributed to operational efficiency, customer service and flexible strategic management. Potential threats to sustainability from inadequate regulation are identified. The creation of a viable business is viewed as an exemplar in foreign technical assistance to a country in transition to a market economy.

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Introduction

Formerly, in the Soviet Union, the vertically-integrated nature of the food chain lent itself to a system of internal food-safety regulation and control, effectively a form of self-regulation. The process of transition from a centrally-planned to a market-driven economy in Russia has entailed a substantial reduction in state control over the production, processing and distribution of food products. Food safety regulation remains primarily the responsibility of the state, but in response to the requirements of a more open and competitive economy the Russian authorities have moved to a system of external regulation based on product certification.

This article employs a case study of the establishment and subsequent management of an independent food-testing laboratory to illustrate fundamental changes in the role of the Russian state and private sector in the provision of food safety. It begins by providing the background to the role of government in regulating food safety in general, and describes relevant legislation, institutions and structures that regulate and control food safety in Russia. It then introduces the case study of the TEST-Pushchino laboratory, reviewing the background to its establishment and detailing its operation and management. Following this, it identifies key features of the competitiveness of the business in a Russian market context. The article concludes with a brief summary of the main findings.

The role of government in food safety

From an economic perspective, government intervention in food safety is justified on the grounds of market failure. Market mechanisms usually provide insufficient food safety to attain the socially-optimal level of risk, i.e. where the marginal costs and benefits of changes in the amount of food safety are equal (Henson and Caswell, 1999, p. 593). Market failure in the provision of food safety

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is affected by both demand and supply factors. Consumer demand for food safety may be reduced by an inability or unwillingness to pay for it, the latter being linked to difficulties in assessing the health risks associated with eating certain products. Moreover, the economic cost of individual consumer choices are generally not fully internalised as food-related health problems can give rise to external costs such as lost production or medical expenses that are borne by society as a whole. The supply of food safety is also imperfect, reflecting the existence of what is termed “information asymmetry”, i.e. unequal access to information between different levels of the food chain and between the entire food chain and consumers. Inevitably, food suppliers are likely to know more about the safety of their product than consumers and may be tempted to exploit this advantage. This is more likely to happen when competition is limited and market infrastructure is poorly developed, as is the case in many transition economies (Hobbs *et al.*, 1997, pp. 329–37).

Governments can act to promote food safety by intervening to a greater or lesser extent in the operation of the market. Perhaps the least onerous approach is to regulate the provision of information such as product labelling, advertising claims or health notices. More interventionist would be the determination of, for example, process standards, whereby manufacturing procedures are controlled, or product performance is required to meet minimum safety standards. Finally, governments could make it a requirement that products have prior approval before they are marketed (Henson and Caswell, 1999, p. 595). Determining the socially-optimal level of food risk and the degree of government intervention required to achieve it will vary from nation to nation and will depend on factors such as the level and distribution of incomes, attitudes to risk and the nature of competition in the food market.

The legislative and regulatory framework

The Soviet, and more recently, the Russian government, have sought to assure food safety by setting procedures to be followed in food preparation processes. These regulations are

complemented by a system of standards that define limits on the biological and chemical contamination that is tolerated in food products. Standards are documented in the *Medical-biological Requirements and Health Standards for Food and Processed-food Ingredient Quality (MBRH)*. Drawn up in the late 1980s when the Soviet Union was in existence, they still form the basis of legislation in the Russian Federation and New Independent States (Coulter, 1994, p. 10 and Appendix 4). At the time these standards were formulated, implementation was deemed to be one of many internal functions undertaken by the vertically-integrated, and bureaucratically-coordinated, administrative command system for food. However, privatisation and the introduction of consumer rights legislation led to a radical change of approach.

General legislation, “On consumer rights protection” received approval by the Supreme Soviet in 1991 but was only fully implemented after 1994. It set out consumer rights in respect of quality, safety and information for a wide range of purchased goods and services. Enforcement through supporting legislation, “On the certification of goods and services”, followed in 1993. The latter established the legal basis for mandatory and voluntary certification of goods and services and also detailed the rights and responsibilities of all parties involved in the certification process (OECD, 1998, p. 133). In relation to foodstuffs, certification signifies compliance with relevant MBRH standards.

With regard to food safety, a number of organisations are empowered with control functions under current legislation. The two most important are:

- (1) the State Committee for Standardisation, Metrology and Certification (Gosstandart), which is an independent governmental agency; and
- (2) the State Committee for Sanitary-Epidemiology Inspection (Goskomsanepidnadzor) which is under the control of the Ministry of Health.

The former is responsible for issuing and modifying standards for all goods and services, including food, and although it does not have an enforcement role it is responsible for certifying compliance to its standards, through a system of accredited testing and certification agents. Goskomsanepidnadzor has direct responsibility for food safety as it

relates to health, and by means of a system of state inspectorates undertakes surveillance monitoring of:

- food processing;
- distribution;
- catering, and
- retail premises (Coulter, 1994, p. 13).

More recently, the Ministry of Agriculture and Food has established a Department of Standardisation, Certification and Inspection for Quality of Food Products (DOS) by presidential decree in June 1996. This is a small unit, whose main role is advisory; it acts at farm level to convert best practice on standards and quality control measures into either draft legislation or technical advice on certification, inspection or enforcement.

Current legislation obliges individuals or organisations involved in food retailing to have a certificate confirming that food products on sale do not contain biological or chemical contaminants in excess of those allowed in the MBRH standards. The legislation affirms the right of consumers to redress if they have suffered loss or injury through the consumption of food that does not meet those standards. Moreover, it is a requirement that the necessary analyses for certification is undertaken in a laboratory accredited under the national system, State Standard of Russia (GOST R) administered by Gosstandart. To obtain accreditation and approval a laboratory must satisfy the relevant authority that:

- equipment is properly calibrated;
- valid analytical methods are followed;
- appropriate quality control systems are in place; and
- staff are technically competent.

Depending on the accreditation status of a testing laboratory it may have the legal authority, “organ status”, to issue certificates on behalf of the Department of Standards and Certification of Foodstuffs and Raw Material for Foodstuffs in Gosstandart. Alternatively, it may be limited to providing analyses that can be used to obtain a certificate from an accredited organisation.

The practical implication of these regulations is that every consignment of foodstuff must have a certificate of conformity for sale at retail level to be legal. Certificates are transferable, for example between processor and wholesaler or retailer, and can be reproduced so that shipments can be

broken up to facilitate sale through the predominantly small-scale food outlets that typically constitute the Russian food retail sector. For imported goods additional certification issued by Goskomsanepidnadzor is necessary. Among other things, this guarantees that shipping arrangements are hygienic and that products conform to Russian labelling requirements. These arrangements are policed by state inspectorates, which monitor food retailers and caterers to ensure, amongst other things, that products for sale have accompanying certification. Policing has become more stringent in recent years and retailers found trading uncertified products are liable to have these goods confiscated and may have fines imposed.

The private sector and the provision of food safety: a case study

In this section we explore the establishment and operation of a Russian food control laboratory, one important outcome of a technical assistance project under the European Union’s Technical Assistance to the Commonwealth of Independent States (TACIS) programme[1]. The rationale for the project centred on the need to improve food safety in Russia, both to arrest generally low and falling quality control standards within the domestic food chain in the early 1990s, and to protect consumers from inferior food imports. In the longer term, it was also recognised that Russian entry to the export market would be dependent on compliance with international food safety standards[2].

The introduction of MBRH standards in 1989 and subsequent legislation to improve consumer rights was viewed with broad approval by a group of scientists working at the Biological Research Centre of the Russian Academy of Sciences in the city of Pushchino, Moscow region. In part they considered the new policies to be an improvement on those of the Soviet period, when insufficient attention had been paid to food safety. Of equal significance was the need for increased testing, implied by the new legislative and regulatory framework, and the opportunity this held for them as a diversification activity. This was an important strategic opportunity at a time when budget cuts were already curtailing Russia’s science programmes.

Accordingly, they began to explore the possibility of establishing a food-testing and certification service. Eventually this became a core element of the technical assistance provided by the TACIS-funded project. By establishing a high-grade laboratory facility, the project would increase testing capacity in the region and serve as a model that could be replicated in other regions of Russia and the CIS[3].

Starting in mid-1993 the laboratory was readied and launched in less than one year. The project provided equipment, ancillary material and the training needed to begin analytical operations. Working within strict budget constraints a range of analyses, judged central to a credible food-control programme, were identified. These included the detection of contaminants, such as pesticides, heavy metals, nitrates, mycotoxins and radionuclides. Initially the laboratory was only able to offer a testing service but within six months of opening the accreditation process was completed, making it possible to issue certificates of conformity.

Originally, it was intended that the laboratory would operate under the management of the competent regulatory authority (Gosstandart) and receive remuneration from that source. This approach was perceived as minimising the financial and institutional risks involved. When it became apparent that such a relationship was not on offer, the decision was made to organise the laboratory as a privately-owned company that would primarily offer food producers and processors an analytical testing facility. This proved fortunate, as it enhanced the laboratory's independence and by implication impartiality in a sector where many testing facilities are attached to research or commercial organisations.

The laboratory traded as a limited-liability company until 1997 when new federal legislation "On non-commercial organisations" and directives from Gosstandart and the Anti-monopoly Committee of the Russian Federation, required that all testing laboratories and organs of certification accredited under the GOST R system should reconstitute themselves as non-commercial bodies. At time of writing the laboratory ANO "TEST-Pushchino" consists of two structures accredited by Gostandart – a testing facility and a certification organ. The latter issues

certificates of conformity with MBRH standards based on results from their own laboratories or other accredited facilities.

In Russia non-commercial organisations can undertake commercial activities and generate profit, but are subject to tax. Profits cannot be distributed as dividends, and must be re-invested in the business. It is permitted, however, to pay up to 15 per cent of profits into a "social fund" for the benefit of employees. The assets of a non-commercial organisation are not divisible and in the event of liquidation assets can only be re-used for the function indicated in the organisation's charter, in this case food testing. While this may seem rather restrictive from a Western perspective, the arrangement has advantages over normal corporate taxation, which is characterised by an excessive number of taxes, with rapidly changing and inconsistent regulations (Tompson, 1997). Moreover, the system of tax collection appears arbitrary and gives Draconian powers to the tax inspectorate (Sutherland, 1999).

Current operations

By 2000 the laboratory offered four distinct services:

- (1) testing foodstuffs and animal feeds for the presence of contaminants;
- (2) issuing certificates of compliance with MBRH standards;
- (3) advising food businesses on quality control; and
- (4) training in laboratory skills and techniques.

In deciding the range of tests and services to provide in a commercial context, a difficult balance had to be achieved between satisfying customer demands, maintaining scientific standards and achieving Russian commercial viability. Changes to the original product mix have reflected these criteria. For example, the laboratory moved to position itself as one of only 11 in the Moscow region capable of testing and issuing certificates of confirmation in the relatively lucrative alcohol sector.

The testing of foodstuffs (including alcohol) and animal feeds is the most profitable element in the product portfolio; although individual test margins vary considerably, reflecting the charge rate achievable given the level of competition and the intrinsic cost of individual analyses. We examined the sources of revenue and found

that approximately half comes from services provided to alcohol manufacturers. Food processors and wholesale organisations each contribute a further 15 per cent of revenue, retail organisations another 10 per cent, with only 2 per cent coming from the former state and collective farms. The principal costs are for salaries and wages and consumable laboratory materials, which together represent 60 per cent of the total; depreciation charges against equipment are also significant and account for a further 20 per cent of the total. The client base, consisting of private-sector domestic producers and multinationals with Russian processing facilities, has grown steadily since launch and TEST-Pushchino has performed over 7,500 analyses and issued 600 certificates of conformity annually. Staff number 36 in total, four of whom have post-graduate qualifications, while ten have completed undergraduate courses and 15 have a technical training.

Competitiveness

We examined TEST-Pushchino's competitiveness and identified three key strengths:

- (1) operational efficiency;
- (2) quality of service; and
- (3) flexible strategic response.

Operational efficiency is essential in a market where attracting and retaining business is now believed by laboratory management to be strongly influenced by price and speed of service. Initially, the involvement of the EU-Tacis team assisted in meeting these requirements. The programme provided capital that would not otherwise have been available in Russia, overcoming a substantial barrier to entry that still exists, but now works to the laboratory's favour by reducing market contestability. Lowering the initial capital requirement of the project also reduced subsequent running costs. The equipment purchased was new and to a high design specification, thus enhancing reliability and speed of operation. The fact that Pushchino was a town built around seven biological institutes assisted its establishment through the availability of suitable laboratory infrastructure and basic equipment. Training in food-testing procedures was to a level that complied with good laboratory practice (GLP). These factors, plus expert management of the news media at the

opening, contributed to the successful launch of the laboratory; but, of course, were not sufficient to ensure its future sustainability. The importance of the original seed funding has progressively diminished as the costs of replacing existing apparatus and purchasing additional equipment have had to be factored into the pricing decision.

Business growth has led to some economies of scale and consequent reductions in the unit cost of many test procedures. The fact that the speed and reliability of service have not been adversely affected by the growth in volume may be attributed largely to high-level technical skills possessed by staff and the imposition of strict quality control systems. Evidence of this may be seen in the strong demand for the laboratory's training services and by good performance in international inter-laboratory competency schemes, such as the Food Analysis Performance Assessment Scheme (FAPAS) organised by the Ministry of Agriculture, Fisheries and Food in the UK.

Flexible strategic response is important in any market, but in our view it is crucial in an emerging market. This strength is evident from the way in which a relatively narrow resource base has been managed by the organisation to provide a range of complementary services, i.e. testing, certification, advice and training. Essentially, the business provides a "one-stop" food-safety service for many customers, and this has been central in maximising returns to the resources under TEST-Pushchino's control. From an original concept that envisaged providing a service for local farm producers and processors, the business has rapidly evolved its strategy to include participation in lucrative niche markets such as that for alcohol, and the provision of bespoke services for international food manufacturers locating in Russia. The key here, as with operational efficiency, has been the recruitment and professional development of a highly-skilled workforce, greatly facilitated by the location of the business within a centre for scientific research.

The devaluation of the rouble and increased regulation of the alcohol market in 1998 have created opportunities for business growth. Until the summer of 1998, the volume of foreign food imported to Russia, especially to Moscow and St Petersburg, had been growing rapidly, while domestic agricultural production and processing volumes for many

foodstuffs had been in decline. The rouble devaluation reversed this trend in some sectors and has led to increased output during 1999 in response to higher domestic demand, most noticeably for processed foods (Agra Europe, 1999b). This upward trend in production indicates an increased requirement for testing and certification and has encouraged the laboratory to expand its analytical services. Increased regulation of the alcohol sector to remove contraband produce, together with a fall in imports, has contributed to a 30 per cent increase in Russia's raw alcohol production in 1999 and an almost 60 per cent increase in vodka and other spirits (Agra Europe, 2000). Again, TEST-Pushchino is well placed to benefit from higher demand for testing and certification.

It is equally important that we identify the competitive weaknesses and threats to the sustainability of the organisation. In the emerging Russian market for food safety these are never very far in the background. The successful penetration of the market for testing and certification of alcohol leaves TEST-Pushchino vulnerable, should this sector experience difficulties, for example, due to a downturn in market demand. Likewise, while the provision of services to major international corporations enhances the laboratory's reputation and secures regular revenue, this is linked to a continuing strategic commitment by foreign firms to food manufacturing in Russia. More significantly, perhaps, much of the equipment used in the laboratory is imported, especially the more sophisticated and therefore expensive items, such as gas chromatographs, atomic absorption spectroscopy equipment and the liquid chromatography system. Spare parts for this equipment can be difficult to source from a Russian base, and their ultimate replacement will require careful financial planning. The collapse of the international rouble exchange rate added greatly to the local costs of imported equipment and other laboratory supplies. Many chemicals are available domestically, but certified standards and reference materials must be purchased from international sources; the rouble costs of these purchases, including the search costs, are high. Reliance on imported materials constitutes a weakness for the continuity and sustainability of the business, but as other

Russian laboratories encounter the same difficulty, this may not be a serious competitive disadvantage.

We have identified a number of important threats to the sustainability of the TEST-Pushchino business. Continuing economic contraction makes for difficult trading conditions in all sectors of the economy. Conventional commercial relations are hampered by problems such as the demonetisation of the economy and the widespread use of inefficient, complicated barter arrangements (Lines, 1998). Payment delays for goods and services rendered are excessive, while contracts are difficult to enforce because of deficiencies in commercial legislation and adjudication of disputes is a long, costly process. Inevitably this raises transactions costs, reducing profitability and/or the volume of business completed. A generally poor banking infrastructure and high levels of risk and uncertainty are reflected in an absence of medium- and longer-term bank credits for business development. As a consequence, finance for investment is limited essentially to retained profits, considerably constraining business expansion.

Certain practices that undermine the regulatory system's ability to guarantee food safety also represent a threat to the success of the laboratory. There are two main aspects here. The most obvious is circumvention of food certification regulations by "rogue" producers, who either trade without certification or provide false documentation; this might be characterised as a form of adverse selection. Sales of untested products are common and can be illustrated with reference to the alcohol industry. Despite action to reduce the prevalence of contraband material, approximately 40 per cent of sales are believed to be of unlicensed and therefore untested product (Agra Europe, 1999a). The potential returns from fraudulent activity in the alcohol sector make it particularly vulnerable to illegal activity, but other food channels, such as those for fresh meat and vegetables are also understood to contain large volumes of untested produce. In the latter examples, the short but diffuse nature of the supply chain, involving many producers and little or no processing, makes it very difficult to enforce current legislation, especially since a high proportion of product is retailed through

myriad market vendors. Apart from the dangers posed to public health, illegal product tends to displace legitimate goods in the market (Henson and Traill, 1993), reducing aggregate demand for testing and certification.

The certification system is also undermined because considerable variability is known to exist in the technical rigour of services provided by certain food-testing organisations. Low and variable standards of analysis reduce the overall reliability of test results and dilute the perceived value of the certification process. Confidence in the integrity of the testing system is vital to underpinning competitive price structures for the industry.

Consumers ultimately must have confidence in the value of certification if they are to be prepared to pay more for certified goods. The extent of this moral hazard problem, in this case the opportunistic disregard for contracted analytical standards, is not accurately known, but anecdotal evidence suggesting that it is widespread has been given credence by the introduction in January 2000 of the legislation “On the quality and safety of foodstuffs”. Its main effect was to augment previous legislation detailing the responsibilities of organisations undertaking testing and certification of food products.

In particular, metrological standards (i.e. the calibration of equipment, weights and measures) have become much more stringent. It is hoped that this will give regulatory authorities more powers to improve testing standards.

Conclusions

The establishment and subsequent development of TEST-Pushchino represents, in our view, a notable success in technical assistance to a transition economy. The project created a viable business in an emerging market, operating in a difficult economic environment.

More importantly, it established a centre of excellence in food testing, an activity of direct benefit to wider Russian society. The key to its success has been the ability and willingness of its management to:

- embrace strategic management principles;
- exploit organisational strengths and opportunities; and
- to adapt flexibly to a rapidly-changing environment.

These internal characteristics are central to the competitiveness of the organisation. The business is also less vulnerable than other sectors to the detrimental effects of widespread demonitisation in the Russian economy. This is because its customers – food and drink processors – have relatively good liquidity, because they supply consumer markets dominated by cash transactions. Of some concern are the potential threats to the medium-term sustainability of the business arising from circumvention of food-safety regulations by producers, and by the existence of low and variable standards from competitors in the provision of food-safety standards. Clearly, government-led enforcement of regulation is important in combating these practices. Ultimately, however, only economic growth and higher per capita incomes will bring about the investment needed to improve standards in the food supply chain and, at the same time, higher effective demand for food safety from consumers.

Notes

- 1 The project was managed by Northern Ireland Public Sector Enterprises (NI-CO) Ltd.
- 2 These issues were widely discussed in Russia during 1993-1994 (see, for example, *Izvestiya*, 1994 and *Moskovskie Novosti*, 1994).
- 3 Professor Cecil McMurray, Chief Scientific Officer at the Department of Agriculture for Northern Ireland, and colleagues, acted as principal scientific advisors to the project.

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