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INNOVATION PROCESSES IN THE RUSSIAN MANUFACTURING SUBSIDIARIES OF MNCS – AN INTEGRATED VIEW FROM CASE STUDIES[3]

The extant literature acknowledges the role of overseas subsidiaries in the growth and development of multinational companies (MNCs). Such subsidiaries are viewed as critical players in the innovation process at MNCs. Although this topic has gained importance, it remains largely under-researched in the Russian context. This study aims to fill this gap by examining the dynamics of the innovation process in Russian-based subsidiaries of global MNCs. It seeks to explore and understand motivation and drivers of innovation, key participants, and impact and outcomes of innovation, with a specific reference to the peculiarities of the Russian institutional environment. We present qualitative findings from several case studies of Russian manufacturing subsidiaries of foreign MNCs, which indicate that Russian subsidiaries are not only recipients of knowledge and technology developed elsewhere in the MNCs, but are active developers of innovative products and solutions that are later applied in other units of the respective MNCs.

JEL Classification: F23, L21, L22, L23, L60, M11, O31, O32.
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Introduction

Innovation processes, that is, the development and transfer of innovative solutions within the organization, are considered crucial activities for the contemporary MNC [Ciabuschi, Martín Martín, and Forsgren, 2012]. It has also been pointed out, however, that due to the specific characteristics of the MNC as a geographically and functionally dispersed organization, innovation processes are largely carried out at the subsidiary level [Andersson, Forsgren, and Holm, 2002; Birkinshaw and Hood, 2001; Cantwell, 1989; Mudambi and Navarra, 2004; Rugman and Verbeke, 2001]. This is especially true in manufacturing, due to the relatively substantial site-specific investments and subsequently, high "sunk costs" of idle production lines or futile technological processes that remain after unsuccessful innovations. In this respect, even if the products to be marketed or technological processes to be implemented across countries are identical and corporations are attempting to manage "global innovations" [Wilson and Doz, 2012], the methods used to implement them efficiently and effectively differ significantly between countries as they depend on:

- The relative position of a country in the current and prospective corporate portfolios and thus, on the pattern of resource allocation among subsidiaries [Dellestrand and Kappen, 2011].

- The specific competitive position of a subsidiary within both international and local markets and industries [Holm, Holmström, and Sharma, 2005], which in turn reshapes internal and external competitive forces and drivers of innovation [Mudambi, Mudambi, and Navarra, 2007].

- The inevitable differences in preferences, income distribution, and purchasing habits of customers in different countries that result in country-specific market segmentation

techniques [Wilson and Mukhina, 2012] and, subsequently, unique pricing and promotion practices [McKinsey, 2012].

- The different configuration and intensity of pressure from local stakeholders [Holtbrugge and Puck, 2009; Reimann and Kauffman, 2012].

- The ability of both the subsidiaries and headquarters (HQ) to absorb, generate, and exchange knowledge [Michailova and Mustaffa, 2011]; this is a function of complementarity and the degree of fit of national and organizational cultures of the headquarters and subsidiaries [Engelen, Brettel, and Wiest, 2012; Anghel, 2012].

The above-mentioned factors that determine the modus operandi of innovative behavior of subsidiaries in different countries explain a steady stream of studies dedicated to innovation processes at the subsidiary level in specific countries and to cross-country comparisons [Almeida and Phene, 2004; Boehe, 2007; Phene, and Almeida, 2008; Molero, and Garcia, 2008; Pearce and Papanastassiou, 2009; Manolopoulos, Söderquist, and Pearce, 2011].

The rise of emerging economies has justified the increase in studies regarding the Chinese, Indian, and Brazilian subsidiaries of MNCs [Consoni and Quadros, 2006; Figueiredo, 2011; Patibandla and Petersen, 2002; Quan and Chesbrough, 2010; Zhang and Pierce, 2010]. Unfortunately, there is almost a complete lack of such research regarding Russian subsidiaries of MNCs. There is only one book devoted to the experience of a particular MNC in Russia, which was published by the company itself [Pepper, 2012], and a few research papers based on single case studies [Johanson and Johanson, 2006; Golikova, Karhunen, and Kosonen, 2011]. This paucity of research is confirmed by reviews of both foreign and local literature on Russian management [Puffer and McCarthy, 2011; McCarthy and Puffer, 2013]. Due to the limited share of foreign subsidiaries in Russian companies (less than 0.5%), such companies

were not properly represented in numerous corporate surveys on innovation conducted in Russia during 1998–2011 [Gurkov, 2004, 2005, 2006, 2011, 2013; Prazdnichnykh and Liuhto, 2010]. Furthermore, Russian manufacturing subsidiaries of foreign MNCs were not properly represented the careful statistical analysis of innovation in Russian industries done in the past few years [Kuznetsov, Dolgopyatova, Golikova, Gonchar, Yakovlev, and Yasin, 2011; Gokhberg, Kuzminov, Laikam, Naumov, Ponomarev, and Ryzhikova, 2012]. Thus, we encountered a largely unexplored field while conducting this study. The aims of this paper are:

- To define the field, that is, to present a short history of foreign-owned manufacturing subsidiaries in Russia and explore the place they currently occupy in the market.
- To develop a research framework suitable for identifying the drivers, patterns, major peculiarities and, where possible, the logic behind innovation processes.
- To make a series of snapshots of innovation-related activities currently carried out in, by, and with Russian manufacturing subsidiaries; however, it might be difficult to get a complete picture because of the speed and abruptness of actions.
- To outline the scope of future studies on MNCs' Russian operations.

Context Setting: A Short History and the Current Status of Manufacturing Subsidiaries of MNCs in the Russian Economy

For almost 60 years, from 1930 to 1987, any foreign ownership of productive assets was prohibited in Russia. In 1987, the Soviet government permitted "joint ventures between Soviet organizations and firms from capitalist and developing countries." The upper limit of

the share of foreign ownership was set at 49%. In 1990, there were more than 2000 such joint ventures, mostly small firms in wholesale, retail, and catering. The lifting of all restrictions on the share of foreign ownership in 1989, and especially the mass-privatization program of 1992–94 created favorable conditions for large MNCs to enter the Russian market. Most joint ventures were dissolved; for MNCs, the major method of establishing manufacturing facilities was the acquisition of Russian industrial companies, usually at rock-bottom prices. In selecting Russian plants for acquisition and for setting up their own production, MNCs primarily looked for sites equipped with advanced foreign machinery purchased in the 1980s under the last Soviet attempt to modernize the socialist economy. In many cases, that machinery was not even installed. Further, such plants were usually staffed by younger engineers and technologists, who had been specially hired to create new production facilities.

However, in the 1990s, the development of manufacturing subsidiaries in Russia was hampered by the strong inflow of direct imports. In 1998, the share of imported goods in the Russian consumer market reached 70% [Center of Development, 2012]. Later, the financial crash of August 1998 and the four-fold devaluation of the local currency created a powerful impetus for export substitution. Simultaneously, foreign companies realized the efficiency of greenfield investments. Thus, from 1998 to 2005, large production sites were installed, especially around the two largest Russian cities — Moscow and St. Petersburg. Due to the restrictions on participation in the most lucrative industries (oil, gas, and ferrous and non-ferrous metals), manufacturing activities of foreign MNCs in Russia are mostly concentrated in consumer markets — food stuff, white goods, consumer electronics, and car assembly. In addition, most MNCs never considered Russia as a manufacturing base for exports into their home countries. This was partly because of the size of the Russian domestic market (in 2011 the total retail turnover of Russia was around US$700 billion, including US$340 billion spent

on food, beverage, and tobacco), which coupled with the markets of the former Soviet republics within the customs union (Belarus and Kazakhstan) presented, at first glance, abundant opportunities for growth. Indeed, foreign companies quickly established their dominance in many of these markets. For example, already in 2006, six foreign tobacco companies controlled almost 90% of the local tobacco market.

Nevertheless, since the mid-2000s, Russian subsidiaries of MNCs have begun to face stronger competition from local firms that managed to modernize legacy Soviet facilities, set up new production facilities, develop popular consumer brands that are better suited to local tastes, and even conduct IPOs on Russian or foreign stock exchanges. Therefore, the MNCs adopted a new method of acquisitions. This time they acquired successful local competitors, sometimes by paying a solid premium with respect to their market price. Some of the major transactions were done by the following MNCs: Unilever, which acquired the leading ice cream producer "Inmarko" in 2008 and the leading ketchup producer "Baltimor" in 2009, Coca-Cola, which took over juice producer "Nidan" for US$400 million in 2010, PepsiCo, which in 2008 acquired the local juice market leader "Lebediansky" for US$1.4 billion, and Danone (the Russian subsidiary of Danone merged with the large local dairy "Unimilk" in 2012). However, the biggest acquisition in the Russian food market was PepsiCo's US$5.4 billion acquisition of food company "Wimm-Bill-Dan" in 2010–11. That deal added 17% to PepsiCo global sales and supplemented the company's brand portfolio by adding five strong local brands worth US$1.5 billion. The acquisitions were not limited to food-related industries. For example, in 2012, international car manufacturers established total control over the Russian car industry (2 million cars produced in 2012) by: acquiring controlling stakes in existing car plants (Renault-Nissan), building new assembling facilities (Volkswagen Group, Ford Motor Corp., General Motors, PSA-Citroen-Mitsubishi, and Hyundai), or using contract

manufacturers for assembly of their models (BMW, General Motors, and Kia). Such large-scale acquisition of local firms presented new challenges for MNCs. In many cases, these deals led to portfolios of overlapping global and local brands and an excess stock of production facilities. MNCs quickly learned how to streamline production between sites or close down some newly acquired factories that did not fit into the corporate portfolio.

The last four years were also marked by active expansion of MNCs beyond the consumer sectors. The financial crisis of 2008–09 greatly affected Russian producers of machinery and equipment (the fall in the industry's output was 57%); therefore, MNCs intensified their efforts in machine-building. For example, Siemens created a joint venture for manufacturing gas turbines, while Alstom purchased a 25% stake in the Russian holding company that controls most of the facilities in rolling stock manufacturing. Solvay is currently participating in the construction of a factory worth €1.5 billion in a joint venture with SIBUR. Furthermore, foreign subsidiaries use domestic Russian firms as contractors when producing well-known Western brands. Finally, in the past two years there has been a surge in Russian packaging facilities of pharmaceutical companies, again via a combination of acquisitions, greenfield investments, and contract manufacturing.

As a result, a typical Russian subsidiary of a large foreign MNC nowadays is a complex organization that manages both local production and imports and usually includes:

- Brand new production facilities set up through greenfield investments,
- Facilities obtained by the acquisition of local companies that undergo continuous modernization,
- Distribution centers for both locally-made products and imports,

- Large country headquarters that perform functions such as business planning (including the search and due diligence of local acquisition targets), development of facilities, imports, marketing and sales, financial control and internal auditing, and training for middle managers, technical staff, and clerical and manual workers.

In many cases, there are also regional engineering centers (sometimes called "small R and big D" centers). However, in the past two years there has been rapid development of conventional R&D centers (for example, by Siemens) that work mostly on corporate-wide projects.

We also stress that many MNCs have developed integrated value chains in Russia, which include producers of semi-finished goods, suppliers of packaging materials, manufacturers of finished products, distributors and suppliers of retailing equipment, and retailers, and where each link is a foreign-owned company. Such value chains are supported by auxiliary services that are also provided by the Russian subsidiaries of MNCs: auditing, legal advice, advertising, and payment systems.

In general, Russian manufacturing subsidiaries of MNCs have achieved dominance in most consumer markets in Russia despite intense competition from three sides: local manufacturers, imports from low-cost countries, and imports from manufacturing subsidiaries of the parent companies located in other countries (the share of imports in the Russian consumer markets is still around 50% of the total). The official statistical data indicate that firms with foreign equity of 10% and more produce around 35% of total Russian manufacturing output. However, not all of these companies may be called Russian subsidiaries of foreign MNCs. There is a widespread practice of keeping holding companies of Russian corporations in offshore locations. For example, in 2011 almost 60% of foreign direct investment into Russia came from just four countries — Cyprus, Luxemburg, the Netherlands, and British Virgin Islands. Thus, by our conservative estimate, in 2012, Russian

subsidiaries of “really foreign” MNCs contributed just over 15% of the total Russian manufacturing output, that is, more than US$100 billion in sales.

Research Framework

In assembling the research framework, we followed the suggestions of Boddewyn [Boddewyn, 1999] that a good study in international management should be multilevel, dynamic, and contextual. The “dynamic” aspect was realized by presenting innovation processes as an integral part of the company’s strategic process. The “multilevel” aspect was achieved by differentiating between manufacturing innovations of different magnitude. Finally, the contextual aspect was included by giving due consideration to specific Russian manufacturing and engineering traditions.

The strategic process may be considered from many perspectives [see Mintzberg, Ashlstrand and Lampel, 1998]. For this study, we selected a so-called position perspective, in which strategy is seen as an attempt to reach or sustain a specific position of the firm in the market. Thus, innovation may be viewed as a process of initiating and mastering the necessary changes to maintain or improve the firm’s position in a particular market or in several markets.

In manufacturing, the magnitude of required changes may be presented on a two-dimensional matrix — the changes in production facilities and the changes in production solutions (see Table 1 in the next section). Here we consider both “hard” changes (installation of new equipment) and “soft” changes (applying new safety standards, new ways of production scheduling, new methods of quality control, and new production formulae and processes). Both hard and soft changes have their own metrics. For hard changes, we may distinguish between adjustment of existing equipment, installation of selected apparatus or machines, new production units, new shops within existing production sites, and new production sites.

We stress that installation of new production sites within the corporation may happen both by greenfield investments and acquisitions. Similarly, instead of installation of new production shops, companies may prefer to use independent subcontractors.

For soft changes, we may distinguish between application of existing technologies (available within a subsidiary, the corporation, or the industry), new ways of combining existing solutions, and the creation of new solutions.

Data and method

We selected only mature manufacturing subsidiaries, that is, those set up over five years ago. We estimate a five-year period to be sufficient for the completion of all initial installation work and the establishment of a framework for innovation. Due to limited resources, we concentrated on process industries. According to the definition of the Institute of Industrial Engineers [Institute of Industrial Engineers, 2013], these are those industries where "the primary production processes are either continuous, or occur on a batch of materials that is indistinguishable. Examples of process industries include food, beverages, chemicals, pharmaceuticals, petroleum, ceramics, base metals, coal, plastics, rubber, textiles, tobacco, wood and wood products, paper and paper products, etc". As mentioned earlier, established Russian manufacturing subsidiaries of MNCs are mostly found in these industries.

Data collection included semi-structured interviews with general managers, managers in production, marketing, and quality control, as well as with other functional specialists responsible for product or process innovation. The interviews were built around four questions:

- What are the current and prospective competitive positions of the subsidiary in the national market and within the overall business portfolio?

- What is regarded as innovation at the corporate and subsidiary level?
- How are innovation projects organized and what is the role of the headquarters, sister subsidiaries, and the Russian subsidiary in various types of innovation efforts?
- How is innovation financed; which types of budgets are used for the different categories of innovation projects?

Most of the interviews were held onsite, and were usually preceded by a tour of the premises to get a better understanding of the core production lines, R&D laboratories, and so on. In addition, we analyzed corporate reports and other documents. In some cases, reports on key innovation projects done in the last 2–3 years and those earmarked for 2013–15 were prepared for us.

Shortly after the interviews, their summaries and salient features were sent to the companies seeking permission to use the company names and data for academic purposes. We received written permission from PepsiCo, REXAM, Mapei, ROCKWOOL, Knauf, Lactalis, and Rhodia Acetow (a subsidiary of Solvay). In some cases, we received detailed feedback, including corrections of mistakes in technical terms and clarification of business facts.

Findings

The Competitive Position of Russian MNC Subsidiaries and Goals of Innovation Processes

As we have outlined, MNCs are engaged in manufacturing in Russia mostly for capturing the Russian and neighboring markets. Therefore, we postulate that Russian subsidiaries have a dual-natured task. First, they need to gain and maintain overall market share. Second, they need to establish their presence or dominance in the premium segments of the market.

Our empirical data support this theoretical proposition. For example, the processed cheese market is divided between Lactalis, Finland's Valio, and Germany's Hochland. Germany's

Knauf controls over 50% of gypsum and gypsum plasterboard production in Russia. UK's Rexam dominates the production of aluminum cans; moreover, Rexam is the only company in Russia that produces both aluminum cans and their lids. Rhodia, a part of the Solvay Group, is the only manufacturer in Russia producing acetate tow — the material for manufacturing cigarette filters. Taking together its production in Russia and imports, the company controls about half of the acetate tow consumption in Russia. The Danish company ROCKWOOL had in 2012 around 20% of the Russian market, while its Russian sales grew by 45% in 2011. Finally, through the acquisition of Lebediansky and Wimm-Bill-Dan, PepsiCo commanded around 45% of the Russian juice market in 2011.[1]

In cases where gaining a large market share is not a feasible option, for example, due to the modest size of the parent company itself, subsidiaries may dominate the premium segments of the market. For example, the Russian subsidiary of the Italian company Mapei has a strong position in the premium segment of special building materials.

Nevertheless, in middle segments, Russian manufacturing subsidiaries face strong competition from local producers, in upper segments, Russian manufacturing subsidiaries face strong competition from imports. The successes of local competitors have largely been due to imitation of manufacturing and marketing practices of foreign MNCs. The marketing director of ROCKWOOL, a Danish manufacturer of building insulation and related products pointed out in the interview: "We created a new market in Russia, trained architects, civil engineers, and building contractors to use new principles and methods of work. Almost immediately, local competitors began installing identical production equipment, registering resembling trademarks, and using the same distribution channels. We must incessantly launch superior, sometimes unique products, to stay ahead of our competitors."

Having a presence and dominance in premium segments requires maintaining a higher standard of quality. For sustaining large market share, price is the key element; so, the most rigid requirements are set for unit costs. Moreover, the competitive logic of expanding or maintaining market share in segments other than the upper-market ones dictates further reduction in prices. Thus, Russian manufacturing subsidiaries face a tricky task — to simultaneously achieve and sustain high quality and reduce unit costs. This goal defines the essence of innovation processes of manufacturing subsidiaries.

Magnitude of Innovation Projects

Through the interviews, analysis of corporate reports, and secondary data we realized that most of the surveyed companies carry out various types of innovation projects simultaneously (see Table 1). For example, ROCKWOOL simultaneously improved its facilities in its first factory (new Moscow), started to build a new production line in its second factory (near St. Petersburg), expanded production capacities of its third factory by 50%, and opened its fourth Russian factory in February 2012. Meanwhile, via regular acquisitions during 2009–11, PepsiCo doubled the number of its production sites in Russia. Lactalis and Mapei expanded their facilities in the existing plants near Moscow and acquired new plants further deep in Russia. In addition, after the acquisition of Italian dairy leader Parmalat in 2011, Lactalis controls two of Parmalat's Russian dairy plants.

Therefore, two types of changes are most popular — continuous improvement of existing facilities using solutions that exist within the corporation, and installation (acquisition) of new production sites. We note that these two processes are closely related. The corporation is able to undertake further acquisitions of Russian companies or build new production sites when it can ensure the efficiency and level of quality of its initial Russian production facilities.

Table 1. Types of innovation projects implemented in 2009-2012 in the surveyed companies

Changes in existing production solutions	**Changes in existing production facilities**					
	New methods for work on existing facilities	Adjustment of the existing facilities	Installation of selected new apparatus or machines	Installation of new production units (production lines)	Installation of new shops within the existing sites	Installation (acquisition) of new production sites
Known for the Russian subsidiary		Ps, Rd, Rx, Rw, Kn, Lt	Lt			
Known for the corporation		Mp, Rw, Rd, Rx, Lt	Mp, Kn	Rd, Kn	Rd, Kn	Mp, Rd, Rw, Lt, Ps
Known for the industry		Ps		Kn	Kn	Ps
A new combination of known solutions				Ps		
Totally new solution		Ps			Rw	Rw

Note: Kn - Knauf, Lt – Lactalis, Mp – Mapei, Ps – PepsiCo, Rw -ROCKWOOL, Rd- Rhodia Acetow

A difficult task for most foreign MNCs operating in Russia was attaining efficiency and a high level of quality at their initial Russian production facilities. They needed to transform the local manufacturing culture that may be described as "low efficiency, high effectiveness," which embodies the view that targets of any importance — from launching a man into space to fulfillment of a monthly plan of a small shop — should be achieved at any cost. Moreover, there was a deep tradition of both high-intensity work for very short periods ("heroic labor efforts" in the Soviet jargon) and low-pressure work for the rest of the time [Kets de Vries, 2001]. Changing such traditions was critical for any manufacturing plant seeking to attain the global standard of efficiency or simply for securing a good score for international performance indicators like the Process Capability Index and the Process Performance Index.

MNCs found the solution to this problem in many ways. First, they supplied newly acquired Russian subsidiaries with detailed production manuals and handbooks of operating instructions that described the appropriate functioning of the processes. Second, international task forces were sent to Russian plants to assist in installing new equipment and Enterprise Resource Planning (ERP) systems and help Russian employees master new technologies and quality standards. There was nothing new about such measures — since the early 1930s and especially in 1970s, the Soviet government had employed American and European corporations (Ford Motors, General Electric, Fiat, BASF, Nestle, etc.) as operators for large turn-key projects. What was really new was that foreign corporations went beyond machinery and equipment and touched "the human side of technological innovations" [Katz, 2004], establishing new practices of human resource management, including new sources of labor, new approaches of skill development and performance assessment.

Western companies that entered the Russian market in the mid-1990s have attracted employees from the defense industry where a somewhat different manufacturing culture

prevailed (stronger quality control, attempts to achieve steady work, etc.). During our plant visits, we met former aircraft engineers in food production laboratories and former nuclear engineers in chemical manufacturing operations. Later, in stark contrast to the dominant practices among domestic firms, Western corporations established other recruitment practices, including hiring young people, often without job experience, elderly people, and those having worked in the Russian subsidiaries of other multinationals or abroad. Gurkov and Settles [Gurkov and Settles, in press] have found that Russian companies avoid hiring young specialists (as they require necessary training), senior employees (eschewing their rich experience), and especially employees with work experience in Western companies both in Russia and abroad (who could disrupt the current organizational process with their superior knowledge).

Second, for all categories of employees — managers, engineers, and workers — regular and intensive improvement of their qualifications was mandatory, which again, is rare in "genuine" Russian companies [Fey and Bjorkman, 2001]. Within MNC subsidiaries, top managers of Russia-based offices can take up Executive MBA programs in the best business schools in the West, engineers can enroll in special courses and get an opportunity for ongoing communication with their counterparts at other subsidiaries in foreign countries, and other workers can follow (advanced) vocational training. Russian managers and engineers especially appreciate the opportunity to improve their subordinates' qualifications.

Finally, foreign subsidiaries established detailed performance assessment systems based on indicators of employees, departments, factories, and the overall company. Such systems exist in only a small number of "genuine" Russian companies [Gurkov, Zelenova, and Saidov, 2012].

The described human resource management (HRM) practices enabled companies to continuously improve production efficiency, by applying company-wide standards, "co-opetition" between sister subsidiaries, and via local initiatives. The ***application of company-wide standards*** is mostly found in maintaining production quality and safety. In many factories, the absence of job-related accidents or injuries is the main prerequisite for the team to get a yearly bonus, the so-called "thirteenth-month salary," designed to foster a sense of collective responsibility. Another important element of quality assurance is a corporate-wide practice of a comprehensive audit of production processes conducted by the largest customers. Thus, REXAM factories producing beverage cans are audited by breweries, Rhodia factories fabricating a material for cigarettes, by tobacco companies, and so on. The results of such comprehensive audits at a particular factory are then disseminated all over the corporation.

Co-opetition between sister subsidiaries is mostly visible in the persistent struggle to reduce the use of raw materials and supplies in established production lines. In this case, there is both a spirit of cooperation and competition between sister subsidiaries. Cooperation is quite open and may be seen in:

- Extensive everyday communication between production managers, engineers, and technicians of subsidiaries from various countries,
- Creation of special temporary task forces built from engineers from both headquarters and sister subsidiaries to solve a particular problem in a Russian subsidiary,
- Annual conferences of plant directors and technology managers for sharing their experiences and solutions.

Competition between sister subsidiaries is less visible, but it affects the major decisions in the headquarters about subsidiaries (allocation of production between production facilities in

different countries, selection of countries for installing new production lines, new production sites, etc.). The unfavorable position of Russian manufacturing subsidiaries within global corporate portfolios (due to an unstable business environment and low institutional support to manufacturing activities (see OECD, 2011a, 2011b) forces Russian subsidiaries to aim for the highest rank within the corporation regarding production efficiency in order to justify further investments in facilities development.

Local initiatives are most visible in the permanent search for new solutions for energy saving. For example, at PepsiCo, among the 12 major energy saving projects implemented during 2008–12, five were local initiatives and seven contained application of corporate-wide practices. An example of local initiative is a project realized in the Sheremetyevo PepsiCo factory, where the naturally cold raw material — well water (+11Cº) — is now used for cooling manufacturing equipment. Normally, about 2MW of power is needed to cool the equipment for soft drink production. This solution, initiated by the subsidiary, received corporate-wide recognition, and allowed for savings of 1.5 million kW*hours in the first year itself.

As the initial success in maintaining quality and lowering costs in the Russian plants is repeated, companies begin considering a wider variety of production opportunities in Russia. These may include the launch of new lines at the existing plants, construction of new plants, and purchase of Russian manufacturers. Thus, we demonstrate the connection between continuous improvement of the existing facilities and installation of new production sites either by greenfield investment or by acquisition.

Organization of the Innovation Process

Usually, decisions about large investments such as construction of new sites, launch of new production facilities, and purchase of Russian firms are taken at the corporate headquarters.

However, the situation is more nuanced when talking about projects that are "small" (adjustment of the existing facilities or installation of some new apparatus and machines) and "medium-sized" (installation of new production units or production lines).

For "small projects" the situation is relatively simple — they are financed as a part of corporate R&D expenses. Depending on the level of centralization of R&D expenses, most of the budget for small projects may be centralized in the HQ's budget for R&D, in the common fund of small projects in a "global business unit," or in the regional headquarters. An example of an innovation process with well-balanced local initiatives and HQ efforts is seen at Mapei, an Italian producer of special adhesives and admixtures for construction that has 58 plants around the world. The company is proud of its high expenditure in R&D (over 5% of the annual turnover). It applies a well-tested algorithm to launch a new product into the market (building a "new formula"), as we explain below:

- The sales director of a subsidiary sends an application to the corporate-wide R&D department stating the reasons for the application (for example, sustained demand), the expected product specifications, its equivalent in the product line of the company or its competitors, and the degree of urgency of adding such items to the production line (high, medium, or low).
- The head of the corresponding sector at the R&D department based at the headquarters carries out a feasibility study and presents the research findings to the head of the R&D department.
- In case it is approved, an "internal technological project" is launched. This results in the creation of a new process chart — which includes the composition of raw materials, terms and conditions for mixing components, etc.

- The process chart is then sent to the foreign subsidiary. The production director at the local factory arranges for production of the minimum-required quantity, consisting of no fewer than three samples (that is, a triple production trial).
- The factory laboratory conducts a quality control test of the new product samples. If the test results are positive, the samples are sent to the HQ for final laboratory analysis.
- At the same time, field research is carried out, both at the prospective customer site and at the subsidiary's own testing site.
- The final laboratory reports and field research are entered into the company's internal information system and used as the basis for the finalization of the "production formula."

Then "formula activation" takes place as follows:

- The local marketing department, jointly with the HQ marketing department, designs new product packaging, provides translation, and corrects the package design and notes, if necessary.
- The local factory starts manufacturing the new product. If necessary, product certification may be secured on a voluntary basis. Simultaneously, the production manager and the quality control manager at the local factory work out new product specifications and adjust them to the corresponding state specification standards.

This way, the Russian division annually initiates the creation and market launch of 5–6 new formulae. The Mapei Corporation launches about 200 such new formulae annually. Like in any process-based production, there is some difficulty with the authorization of raw materials, that is, getting approval from the parent company for the use of local raw materials for new initiatives. However, on the whole, the algorithm is rather accurate and efficient.

In the aforementioned example, the sales director of a subsidiary initiates the innovative project, while a significant part of the work is performed at the corporate headquarters. The situation is more complicated, however, when all the innovation processes are performed locally, at the Russian subsidiary. One thorny issue in such a situation is regarding ownership of the budget of "small projects" (product and process modification within the existent brands). Here we found a wide variety of solutions depending on the definition of the "key success factor." If the company cites addressing customers' special needs as the key success factor, then the development budget remains at the marketing manager's disposal. During the project, marketing specialists compensate the technical services and line production departments for new product development costs, such as the development of new process specifications and process charts, manufacturing line breaks for product trial production, etc. They also take responsibility for the project's schedule and overall results. However, if the "key success factor" is new product formula development, the development budget is located at the R&D department, which compensates the marketing departments and production units for additional expenses.

The situation with medium-sized projects that require both the installation of new production units as well as finding completely new solutions is more complicated. An example of such a project was pouring hot tea into disposable containers — thin plastic bottles — at the Russian subsidiary of PepsiCo. Before that, in other countries that tea drink was bottled in returnable containers — thick plastic bottles. However, the collection and reuse of thick plastic bottles totally failed in Russia. To solve the problem, many well-known but formerly isolated solutions were combined into one complex solution: pasteurizing bottle caps with the hot drink itself and creating excess pressure in the bottles by injecting inert gas that guarantees both the maintenance of the elasticity of the thin plastic bottle and the protection of the drink from oxidation. This solution was adopted on three Russian production lines. As the

popularity of cold tea in the U.S. was growing, this new solution was designated as a “best practice” and was successfully applied in the American factories of PepsiCo. The project was quite successful, but its launch required the combined efforts of the head of the Russian subsidiary, the global brand’s technical director, and the director of global brand’s international projects.

Discussion

Foreign-owned manufacturing subsidiaries are strengthening their presence in the Russian market, particularly in the FMCG sector. They expand their production facilities and acquire successful domestic Russian competitors. Innovation is seen as a natural means to achieve the dual objectives of these Russian subsidiaries — to gain and maintain overall market share, and to establish a presence or dominance in the premium segments of the market. They are viewed as part of the overall business strategy and as a source of developing a sustained competitive edge. Our findings indicate that innovation is deeply embedded in the regular operations of Russia-based foreign subsidiaries of MNCs, and it is not just an ad-hoc phenomenon.

In line with the tenets of international business literature, we find management initiative at the subsidiary level and a spirit of entrepreneurship as key drivers of innovation. In the quest for production efficiency, management of the subsidiary seeks new ways of manufacturing and optimizing production processes. Hence, quite often innovation is driven by the need to cut unit costs. The management of Russian subsidiaries strives to achieve a strong reputation in their respective MNCs to argue that further investment in Russian facilities is worthwhile (rather than in other subsidiaries).

Further, we note that innovation is not necessarily a product of a formal corporate R&D function, and it may well stem from (minor) adjustments and adaptations. Russia’s foreign

subsidiaries may not necessarily have a formal R&D mandate from the parent company and may not even possess an R&D center. However, innovation in Russia's foreign manufacturing subsidiaries is facilitated by the following measures: (1) maintaining corporate-wide standards of product quality and production safety, (2) detecting, formalizing, and accumulating "best practices," and (3) a courteous attitude toward all staff members and the encouragement of initiative. While all these measures may seem trivial and standard for most Western firms, they are not universally applied in domestic Russian firms. This is something that differentiates the subsidiaries of MNCs and local companies. In particular, the differences in the perception of human capital are striking. Russian domestic firms tend to under-invest in their staff. In contrast, foreign subsidiaries consider their employees as a source of creativity and new ideas that can enhance profitability via innovation. Hence, they are open to employment of people from different social backgrounds.

The interplay of such measures means that innovative solutions and products developed in Russian subsidiaries are then used in the other units of the MNC (having gone through a necessary corporate "accreditation" process). Using Kuemmerle's classification [Kuemmerle, 1999], we can state that while most of the Russian subsidiaries are "home-base exploiting" in nature, that is, relying on the competencies of the parent company, they are also increasingly displaying certain features of "home-base augmenting" subsidiaries, that is, generating competencies for the parent company and sister-subsidiaries.

Conclusions

Our study may serve as an extension to the recent book by Govindarajan and Trimble [Govindarajan and Trimble, 2012]. Indeed, Russian manufacturing subsidiaries are becoming an integral part of MNCs' portfolio of production sites and are gradually becoming the source

of innovation of corporate-wide importance. However, this conclusion is based on a limited set of case studies within the processing industries. We highlight three promising directions for further studies. First, future studies should include other industries, especially car assembly and machine-building. Second, it is important to find possible differences in organizing innovation processes in subsidiaries depending on the specific characteristics of the parent company. Finally, the country-of-origin effect of the parent companies and sister subsidiaries may be a promising field for further study of innovation processes in Russian manufacturing subsidiaries of MNCs.

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