MANAGEMENT IN BUSINESS

NEW PUBLIC-PRIVATE PARTNERSHIP MANAGEMENT IDEA IN MANUFACTURING BUSINESS

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ABSTRACT: In the 21st century the manufacturing business has a lot of possibilities in using of the recycling process. The Public-Private Partnership business model can improve the recycle business. The core challenge is a creation of a new PPP business manufacturing model especially in the recycling business. The purpose of the article is the reasoning for a new PPP business model referring to an idea about new PPP recycle-manufacturing business mechanism. The article suggests creation of the business model BLoOO (build - lease operational - own - operate) and advocates it as the decision for improvement a manufacturing business.

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Introduction

The EU member states have faced to ecological and manufacturing challenges. The existing wastes in metropolises are non-used resource which can be included in the manufacturing process. Recycling business gives a possibility to develop a new manufacturing business. As a sustainable business model we can accept public-private partnership. The creation of cooperation between manufacturing companies and recycling business as well as public sector will contribute for the establishment of a new PPP recycle-manufacturing business mechanism. This is a motivation to stop environment pollution. Igor Ansoff’s Matrix (Ansoff, 1968) is a good approach to analyze the new PPP recycle-manufacturing business mechanism. In this way the manufacturing business is able to receive recycled resources from the recycling company at lower price in comparison to the vendor’s prices.

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possibility in PPP is an acquirement of the recycling company from manufacturing consortium by the capital market.

The purpose of the article is the creation of a new PPP business model referring to an idea about new PPP recycle-manufacturing business mechanism. The subject of the article is the manner by which the new PPP recycle-manufacturing business mechanism could be managed by the manufacturing business.

**Review of the manufacturing and recycling case on the EU level**

The manufacturing process in 21st century can possibly be based on new PPP recycle-manufacturing business mechanism. There are a lot of well-known PPP models (EC, 2003) as well as different contracts (ADB, 2008). In our research we analyze possibilities for the private sector, especially in manufacturing companies which need to receive resources at a lower price in comparing with supplier’s prices. This could be possible if they use recycling process with more effective management manner than usual.

In situation when the recent economic crisis has led to the decrease of manufacturing to 15.1% of GDP since 2008, the important goal of European Union is to provide industrial renaissance process (EC, 2005). As we know, that industry is the core element of the EU. In this way, manufacturing is one of the most important elements in EU competitiveness. We need a high level of innovation in manufacturing process than will reach high competitiveness level. We pay attention to the multimillion consumers in EU as well as million numbers of SMEs. In this way we can see that we have a possibility to create new PPP recycle-manufacturing business mechanism.

Currently, business in EU needs easier access to a wide range of suppliers, lower unit costs and greater commercial opportunities. This will be possible when manufacturing companies use recycling business and merged manufacturing SMEs. For creation of the new PPP recycle-manufacturing business mechanism we must accept that the manufactory companies of the end products will need an own supplier lines.

The manufacture of recycling products has really innovative character in reducing energy consuming. For instance, manufacturing glass containers with recycled cullet consumes 32% less energy than using virgin materials (EPA, 1996). Added value in manufacturing process is important for all involve materials, hence the manufacturers need to create new product at a lower prime cost and to have a much higher competitive value on the marketplace. This could happen in situation of large scale using recycled products in manufacturing process (EPA, 1996). The waste management process is regularly included in Directive 2008/98/European Community (EC, 2008).

Through using recycling process the EU will achieve reducing CO2 emissions, saving resources and energy, steel’s green innovation, energy-saver economy, more manufacturing competitiveness, less waste.¹

**New business PPP model**

In this section we suggest a new business PPP model which is applicable in particular to recycling business. This research follows in three subsequent stages. It is accepted that the land for waste recycling plant is actually the private sector property, which is a typical SPV (special purpose vehicle). The waste collection process is managed by

¹ e.g., see APEAL - the Association of European Producers of Steel for Packaging, www.apeal.org

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the private partner and the waste separate collection baskets are public sector properties.

The first stage refers to the possibility of using BOT (build-operate-transfer) option, which is not possible, because the land is accepted to be a private property and cannot be transferred to the public partner in the end of the contract. Consequently, for the realization of the new business PPP model we can accept BOO (build-operate-own) option. This option is specific one; at first, the recycling factory and lend are private properties and, at second, the public sector properties are the waste separate collection waste baskets.

The second part of the research is based on an operational leasing, where the LoOT option\(^1\) is valid; it logically means purchasing of the equipment and facilities by the private sector. By the accepted LoOT option we give attention on the needed innovation during the recycling process. It is assumed that the recycling equipment and facilities must be changed three times in 30 years duration of the contract or every 10 years.

In stage three of the research we accept new business PPP model which is intended especially for manufacturing based on recycled resources. The model unites the above mentioned options - BOO and LoOT. The creation of a new business model BLOO (build - lease operational - own - operate) comes as a final result. This model could be applied according to Horizon 2020, especially in the creation of Factories of the Future (FoF) (EC, 2013).

**Creating of the new PPP recycle-manufacturing business mechanism**

For the building up of the *new PPP recycle-manufacturing business mechanism* it is examined ways the manufacturers can find a solution to mobilize resources for production purposes at a lower cost and increase the competitive level. As we mentioned above, this can happen by applying recycling principle. The private sector is introduced first by a recycling factory (Special Purpose Vehicle) which is a stock company with trading shares on a capital market. The public sector is introduced by a municipal administrative unit. The researched manufacturing companies are SMEs which are united in manufacturing consortium with the purpose to put all efforts on evolving of a recycle resources in a manufacturing process at a lower cost. The SME’s could be manufacturers of different products.

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1. In this research we accept the LoOT model (operational leasing - operate - transfer). Operational leasing - transferring the assets to the lessor at the end of the lease period.
The creation of a recycling-manufacturing consortium can occur through an investment strategy (Porter, 1980), which gives possibility of manufacturing consortium to acquire all recycling company shares on a capital market. The existing recycling company (MoF, Bulgaria, 2009; UN, 2008) is based on a new PPP business model. The recycling company works on a great metropolitan level and produces recycling products.

The figure shows the process of acquiring shares by the manufacturing consortium. This process is performed on the capital market, where the manufacturing consortium acquires shares from the recycling company (special purpose vehicle - SPV). In this way we have acquiring company process between two private partners, which is typical investment strategy.

The recycle-manufacturing consortium includes also associated partners - technical university and an innovation center. We know that recycling company can recycle many wastes, for instance different kind of glasses, paper, plastic, metal and waste food. Waste food is necessary for the creation of an additional plant for gas manufacturing.

**Management process of new PPP recycle-manufacturing business mechanism including a consortium**

The management process is based on a complicate cooperation between all manufacturers as well as recycle process including different waste-recycle types. Figure 2 shows the shares allocation process.

**Figure 2. Shares allocation between shareholders**

![Diagram showing shares allocation process]

Source: Own construction.

Through applying the new PPP recycle-manufacturing business mechanism we can create a new strategy management model in PPP. Consequently, the creation a new PPP recycle-manufacturing business mechanism develops a “new” business synergism. It includes the recycled resources in the manufacturing process of the recycle-manufacturing consortium and the selling of the non-used recycled resources to third parties.

The recycle-manufacturing consortium could achieve a double benefit. The first one happens when the recycled resources are included in the manufacturing process of the consortium at lower prices. The profit comes from the lower prices of the recycled products in comparison of the prices suggested by the suppliers. The second gain
comes when the recycled products are sold on clients and has been generated a profit; it comes from a lower prime cost of the recycled products. That notes the specification of the strategy management by the achieved business synergism, which will be available in the input and in the outcomes of the recycle-manufacturing consortium due to the high level of results in the recycling waste and manufacturing cycle.

The process after shares allocation from the recycle-manufacturing consortium logically needs to create new management model based on recycling and manufacturing process. The recycle-manufacturing management body will include all of the above mentioned manufacturers. Figure 3 shows the management body functionalities.

**Figure 3. Recycle-manufacturing management body**

Recycle-manufacturing management body has specific responsibilities to ensure resource balance between recycling process and manufacturing of the end products. Actually this is management activities between recycle factory and SME’s.

**The Igor Ansoff’s Matrix Product-Market Strategies application in new PPP recycle - manufacturing business mechanism**

This part of the article discusses the new PPP recycle - manufacturing business mechanism according to Igor Ansoff’s Matrix (Ansoff, 1968). The strategy management is really important because by its support we can evaluate the possibilities in front of the new PPP business model BLoOO and including recycle-manufacturing consortium activity.

Now we will present the new PPP recycle-manufacturing business mechanism based on a new BLoOO business model by using Igor Ansoff’s Matrix.

*First, market penetration strategy.* Applying the investment strategy by shares acquiring process on a recycling factory can indicate penetration from the manufacturing consortium in recycling business.
Second, product development strategy. Processed recycled products included in manufacturing process of the recycle-manufacturing consortium, without supplier interaction, which is high level of effectiveness.

Third, market development strategy. This strategy is applicable, because of the fact that the recycle-manufacturing consortium will sell non-used recycled resources in manufacturing process to third parties.

Four, diversification. The recycle-manufacturing consortium uses various recycled products (solid waste - metal, paper waste, plastic, biology waste, etc.). Through using the diversification in business strategy we have the next three different possibilities, as follows:

- Concentric diversification refers to adding new but related products or services in the recycle-manufacturing consortium, namely this is the recycled materials included in manufacturing process;
- Horizontal diversification refers to adding new, unrelated products or services for present customers; actually this is applicable in the case trading with a third parties;
- Conglomerate diversification includes adding new, unrelated products or services; this is possible if recycle-manufacturing consortium produce different recycled products for a third parties.

Usually, each shareholder produces a different end product. Accordingly, we can review the specification of the vertical integration by using the new PPP recycle-manufacturing business mechanism, as follows:

- Forward integration: the sale of non-need recycled products to third parties;
- Backward integration: manufacturers in consortium own the waste recycling factory and use the recycled products in production process;
- Balanced integration: this integration is not applicable for the article.

Horizontal integration. In the core of the new PPP recycle-manufacturing business mechanism, the consortium can increase the control over a firm’s competitors: as the inclusion of some SMEs in consortium will give them great competitive advantages.
Conclusion

The article discusses the PPP business model as a new recycle-manufacturing business mechanism. Interaction of the private sector in the waste management process provides an environmental protection effect. The new PPP business model BLoOO gives to the manufacturers a possibility to create an innovation in their management process. Through the reaching business synergism the recycle-manufacturing consortium will be satisfied in attaining the high competitive level.

The final goal is achieving a good profit for SMEs included in the consortium. The public sector will be satisfied because the business in EU will have an innovative face and the CO2 level will be decreased. The European Commission’s aim of 20% industry share in European GDP is possible to be reached by 2020. Consequently, the environment protection will be a special community benefit as well as possibility of the new work places will be created.

References

APEAL - the Association of European Producers of Steel for Packaging, www.apeal.org
EC, 2013. Contractual public-private partnerships in Horizon 2020, Brussels
Appendix

TABLE 1. QUALITY ASSURANCE MECHANISMS FOR HIGHER EDUCATION IN THE RUSSIAN FEDERATION

<table>
<thead>
<tr>
<th>NAME</th>
<th>AUTHORIZED ORGANIZATIONS</th>
<th>SHORT DESCRIPTION</th>
<th>OUTCOME</th>
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<tbody>
<tr>
<td>Licensing of educational activity</td>
<td>Federal Service of Supervision in Education and Science</td>
<td>Determination of the compliance of the educational process conditions offered by an educational institution with the state requirements (availability of classrooms, equipment, textbooks, educational qualifications of the faculty and other conditions for implementing educational activities). In case such compliance is confirmed the educational institution shall receive a license to carry out educational activity. The annex to the license specifies a list of educational programs the institution may deliver. The license is valid: indefinitely. An inspection control over the fulfillment of license regulations shall be periodically carried out.</td>
<td>Granting a license (permission) for carrying out educational activity. The license gives a right to carry out educational activity on educational programs indicated in the Annex to the license.</td>
</tr>
<tr>
<td>State accreditation of educational activity</td>
<td>Federal Service of Supervision in Education and Science</td>
<td>Confirmation of the compliance of the educational activity on basic educational programs delivered by an HEI with the federal state educational standards. Based on the results of the external review conducted by independent experts.</td>
<td>If a positive decision on state accreditation is made a HEI receives a state accreditation certificate with the application indicating a list of accredited IGS and levels of education.</td>
</tr>
<tr>
<td>Accreditation Board (commission) of Rosobrnadzor</td>
<td>Making a decision on granting state accreditation / refusal of state accreditation based on the review of information and analytical materials prepared upon the results of external review.</td>
<td>State accreditation certificate is issued for a period of 6 years. State accreditation certificate shall confirm the right of a HEI for issuing its graduates state format documents on the appropriate level of education and make a claim for receiving budgetary funds for students’ training.</td>
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<tr>
<td>National accreditation agency</td>
<td>Organizational, technical, information and analytical support of the state accreditation procedure.</td>
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<td>Expert panels</td>
<td>Temporarily created structures performing external evaluation of HEIs’ activities.</td>
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<td>Commissions of federal districts on quality evaluation of higher education</td>
<td>Commissions on quality evaluation of higher education have been created since 2014 in each of the eight federal districts of Russia. Commissions are composed of the heads of higher education institutions of the federal district, representatives of employers’ associations, leaders of student organizations, representatives of federal and regional state authorities. The main task of the Commission is the monitoring of HEIs and district branches, as well as the performance analysis of higher education institutions involved in licensing and accreditation.</td>
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<tr>
<td>State control (supervision) in the sphere of education</td>
<td>Federal Service of Supervision in Education and Science</td>
<td>State control (supervision) in the sphere of education includes the federal government control over the quality of education and federal government supervision in the sphere of education. The federal government control over the quality of education is understood as the activity focused on evaluating the compliance of educational activities and training of students on state-accredited educational programs with the requirements of federal state educational standards by way of organizing and conducting inspections activities aimed at ensuring the rights of the education quality. The federal government supervision of citizens for education. In case of violations of legislation in the sphere of prevention, detection and suppression of violations by HEIs education, educational organizations of the requirements of the legislation on education by way of are issued the instruction to rectify organizing and conducting audits of organizations, discovered violations. Frequency of state control (supervision) in the sphere of education shall not be more than once every 3 years.</td>
<td>Ensuring the compliance with the legislation requirements guaranteeing citizens’ rights in the sphere of education.</td>
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</table>
### Table 1. Quality Assurance Mechanisms for Higher Education in the Russian Federation

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<th>OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public accreditation of organizations engaged in educational activity</td>
<td>Russian, foreign and international organizations</td>
<td>Recognition of the level of a HEI's activity as compliant with the relevant criteria and requirements of the Russian, foreign and international organizations. The procedure of public accreditation, evaluation forms and methods applied during this accreditation, as well as the rights granted to an accredited organization are established by an organization carrying out public accreditation.</td>
<td>Gaining by a HEI of public recognition, special rights established by an accredited organization.</td>
</tr>
<tr>
<td>Professional public accreditation of educational programs</td>
<td>Employers and their associations as well as their authorized organizations</td>
<td>Recognition of the quality and level of training of graduates who have mastered an educational program delivered by a HEI as compliant with the requirements of professional standards, labor market requirements for specialists, workers and employees of the corresponding specialization. The procedure of professional public accreditation of professional educational programs, forms and methods of assessment during this type of accreditation, as well as the rights granted to an educational organization delivering accredited professional educational programs, and (or) to graduates who have mastered such educational programs are established by an employer, employers' association or their authorized organization that conduct such accreditation.</td>
<td>Educational program being recognized by employers. The outcomes are considered during state accreditation.</td>
</tr>
<tr>
<td>Self-evaluation</td>
<td>HEIs</td>
<td>Self-evaluation is conducted in order to ensure the availability and transparency of the information about a HEI's activity. Self-evaluation is annually conducted by an educational organization as on the 1st of April of the current year. The self-evaluation process includes the evaluation of educational activities, organization’s management system, content and quality of students’ training, organization of the educational process, graduates’ being in demand, the quality of personnel, teaching, library and information support, logistics, internal education quality assurance system, as well as the analysis of the performance indicators of the organization subjected to self-evaluation. Self-evaluation report shall be published on the website of a HEI till April 20 of the current year.</td>
<td>A self-evaluation report is prepared and published on the web-site of a HEI till April 20 of the current year. Self-evaluation report is used when conducting state accreditation and state control (supervision) in the sphere of education.</td>
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</tbody>
</table>