Varazdin Development and Entrepreneurship Agency and University North in cooperation with Faculty of Management University of Warsaw Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat Polytechnic of Medimurje in Cakovec Association of Economic Universities of South and Eastern Europe and the Black Sea Region



# **Economic and Social Development**

53<sup>rd</sup> International Scientific Conference on Economic and Social Development Development

### **Book of Proceedings**

Editors: Igor Klopotan, Katalin Czako, Victor Beker



کیپد العلوم الفادون ۲۰۰۰ المالیم الفادون الفادون المنتصل و الاختمامید المالیم ۲۰۰۰ المالیم المالیم المالیم المالیم Faculté des sciences juridiques économiques et sociales-salé





Sveti Martin na Muri, 10-11 September 2020

Varazdin Development and Entrepreneurship Agency and University North in cooperation with Faculty of Management University of Warsaw Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat Polytechnic of Medimurje in Cakovec Association of Economic Universities of South and Eastern Europe and the Black Sea Region

> Editors: Igor Klopotan, Medjimursko Veleuciliste, Croatia Katalin Czako, Széchenyi University of Győr, Hungary Victor Beker, University of Buenos Aires, Argentina

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This esd Conference is part of the project "Centar održivog razvoja"/"Center of sustainable development", co-financed by the European Union from the European regional development fund and implemented within Operational Programme Competitiveness and Cohesion 2014 – 2020 of the Republic of Croatia, based on the call "Investing in Organizational Reform and Infrastructure in the Research, Development and Innovation Sector".

Title ■ Economic and Social Development (Book of Proceedings), 53<sup>rd</sup> International Scientific Conference on Economic and Social Development Development

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Publisher ■ Design ■ Print ■ Varazdin Development and Entrepreneurship Agency, Varazdin, Croatia / University North, Koprivnica, Croatia / Faculty of Management University of Warsaw, Warsaw, Poland / Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat, Morocco / Polytechnic of Medimurje in Cakovec, Cakovec, Croatia / Association of Economic Universities of South and Eastern Europe and the Black Sea Region, Thessaloniki, Greece

#### **Printing** ■ Online Edition

#### ISSN 1849-7535

The Book is open access and double-blind peer reviewed.

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### DEVELOPMENT OF A CASE-BASED APPROACH TO THE DIGITAL SUPPORT OF REGULAR ACTIVITIES TAKING INTO INTERNATIONAL EXPERIENCE

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#### ABSTRACT

The economic activities of enterprises, institutions, societies and other associations of the Russian Federation are thoroughly registered in the Russian National Classifier of Types of Economic Activity (OKVED-2019), comprising 21 sections (activity field), 88 classes and more than 160 thousand specific activities. Being repeatedly reproduced, a lot of these types are regular and implemented within the territory of the Novosibirsk region. Efficient information/digital (IT) support of key economic activities tends to be a top priority for creating the region's digital economy. However, this support has not been not sufficiently developed, rarely if ever.

**Keywords:** Case-based approach, CBR-decision-making cycle, Decision making process, Decision support system, Regular activities

#### **1. INTRODUCTION**

Existing IT-support tools for enterprises are application -specific and often aimed at collecting, transmitting, primary processing and displaying data, as well as the making accounting electronic documents. Decision makers (DM), managers of various positions are entitled to take administrative decisions. Decision Support Systems (DSS) have also been poorly developed and tend to be efficient only in case of simple activities. Current decision-making approaches are often based on plausible reasoning, including decision-making based on induction, abduction, argumentation, analogy, and cases. The implementation of these approaches facilitates developing a variety of intelligent decision support systems. The case-based approach (Case-based reasoning, CBR) based on previously gathered experience in solving similar problems is one of the well-known approaches to solving problems related to decision support. The following basic concepts are used in the article:

- Activity a focused process of creating (acquiring) and applying specialized technologies in a specific subject area;
- Subject area a part of the real or virtual world for an individual (or many people) to carry out his/her activity;

- Activity system (AS) a system of activity management;
- Technology knowledge of "what and how to do" and its informational and material implementation in a specific subject area (in AS, technology is considered as an object of activity).

# 2. INTERNATIONAL EXPERIENCE OF DEVELOPING A CASE-BASED APPROACH

A case-based approach is the process of handling a new task (solving a problem) by reusing and adjusting (if necessary) solutions to similar problems obtained before. The substance of the case-based approach is to apply gathered experience of the problem solving when developing solutions to new problems. This approach is based on decision making by analogy [2, 3, 4]. Cases, as a rule, are structured presentation of gathered experience by data and knowledge, providing their subsequent automated processing using specialized software systems [1] and encompass the problem situation description and a set of actions taken to eliminate this problem situation (its solution) [2]. The following foreign and domestic researchers as R.C. Schank, R.P. Abelson, A Aamodt., E. Plaza, J Kolodner, A.F. Berman, O.A. Nikolaychuk, A.I. Pavlov, A.Yu. Yurin, D.F. Luger, G.S. Osipov, P.R. Varshavsky, A.P. Eremeev and other carried out the research in the terms of the development of a case-based approach, the development of new ways of presenting as cases, and also suggested new mechanisms and methods to implement particular phases. Here are the main features of the cases [5]:

- Case represents specific knowledge that is contextual, enabling the use of knowledge at the application level;
- Cases can take various forms (types): covering different time intervals; linking solutions to problem descriptions; results to situations, etc.;
- Case includes only that experience that can train (be useful), fixed cases can potentially help a specialist (DM) achieve the goal, facilitate its formulating in the future or warn him/her of a possible failure or unforeseen problem.

The development of the case-based approach is related to the creating new ways of presenting knowledge as cases, offering new mechanisms (methods) to implement particular stages:

- Algorithms that increase the efficiency of calculating the similarity (proximity) assessment [6], [7];
- Transformational adjustment [4];
- Combined application of cases with transformational or generative adjustment [8];
- Case presenting as vectors, methods of search (extraction) and cases reuse[1];
- Implementing of mechanisms to create a base of design decisions built on a case-based approach, including the functioning of a case-based DSS and analysis of the main methods for assessing the degree of data interconnection in a case-storage [9];
- Building a distributed output system based on cases for intelligent systems [10];
- Application of group selection methods (voting procedures) found in analogous case for solution adjustment[4].

# **3. SAMPLE AND MODIFIED DECISION-MAKING WITHIN THE CASE-BASED APPROACH**

The basic components of the activity are the goals and objectives of it, technologies, as well as actions and results of the activity [11]. We suggest using the case method to manage complex activities in any subject area efficiently. A typical CBR cycle of decision-making related to the implementation of activities is presented in [12, 13].

This cycle includes four basic operations to solve the task of implementing activities in a particular situation:

- Case extraction (from the library of previously implemented solutions in similar situations) similar to that (new) situation;
- The best case reuse;
- Review (analysis) and correction of the case (if necessary);
- Saving the decision taken in the case library.

Figure 1 shows the CBR-cycle improved by the authors to develop and make decisions related to the implementation of a certain type of activity (of a particular activity technology).

Figure 1: The Modified CBR-cycle of development and implementation of management



It differs from sample CBR-cycle by obviously taking into consideration participation of the DM in the process of solving situation task of implementing the activity in the new way of transforming the actually implemented task solution and during regular updating the case base by deleting the irrelevant cases. Moreover, unknown case situation should be taken into account. The regular activity system of a person (many people) is shown in figure 2. It demonstrates the subject of activity (with its needs-n, motives-m, objectives-o and tasks-t), an object of activity (technology) and also an information management system (IMS), within which the base of decisions made and case situations is created, maintained, and updated.

Figure following on the next page





The symbols in the fig. 2 mean the following: CB - case base; IMS - information management system; N- needs; M - motives; O - objectives; T - tasks; IEN, IEX - input and output information; IIS - data for the subject; IS - data for IMS; ISD - data on means and actions; IO - data on the state of the facility; I - data on external impact on AO (activity object); IP - data on the results. Figure 2 shows that the most important component of activity system of a regular type is the case base (CB) of activity providing a quick access to it by the actor.

## 4. APPLICATION EXAMPLES OF A CASE METHOD TO IMPROVE STEEL melting TECHNOLOGY

The first example is arranged according to a well-known logical scheme "as it is – as it will be (as it should be)", figure 3 and figure 4. It compares the well-known approach, used by the company "TSIFRA" (Moscow) in particular and proposed by the authors case-based approach to quality management of steel production in arch furnaces.







Next figure 5 shows a functional diagram of the process control system that takes place in a complex cycle-operation production facility, for example, the process of steel melting in an oxygen converter. This diagram differs significantly from traditional systems of this purpose. It does not contain the full mathematical model of the control unit (OU) that is usually created for such facilities. Instead of a mathematical model using a case database (AIPCDB) and the base of the retrospectively optimized control programs (BROCP).





The symbols in the figure 5 mean the following:

- $Y_j^{\mathcal{A}}(t), U_j^{\mathcal{A}}(t), W_{\mathrm{K}}^{\mathcal{A}}(t)_j, W_{\mathrm{HK}}^{\mathcal{A}}(t)_j$  factual output impact of auto service facility on the environment within j- technological cycle at the t time, the actual controlling impact on auto service facility, actual controlled external impact on auto service facility, actual uncontrolled external impact on the auto service facility, respectively;
- $Y_j^{\rm H}(t_i), U_j^{\rm H}(t_i), W_{\rm K}^{\rm H}(t_i)_j, S_j^{\rm H}(t_i)$  is the vector of full-scale measuring signals (data) of the output impact of the object related to the j technological cycle and the discrete time t i., the signals vector of the full-scale controlling impact on the facility, the vector of the full-scale signals on controlled external impact (disturbances), the vector of the full-scale signals characterizing state of the facility in the j cycle at time t i;
- $Z_j^{\rm H}(t_i)$ -generalized vector of full-scale signals received from transducer sensors  $D\Pi_U, D\Pi_S, D\Pi_Y, D\Pi_W$ ;

- *PR*(*j*), *PR<sup>o</sup>*(*j*) –the actually implemented and optimized program of the object's operation during the period Tj, respectively;
- $PR^*(j+1)$  –set operation programme for the period T(j+1);
- { $\widehat{PR}(j-m)$ } ROCPB programme of T(j), T(j-1), ..., T(j-m) periods};
- AIPCB-actually implemented production cycle base;
- ROCPB- retrospective optimal control programme base.

#### **5. CONCLUSION**

Presently, various methods have been developed to implement a case-based approach. However, the issue of developing new methods to increase the efficiency of re-employing casebased approach remains topical. The authors of the article researched a typical decision-making process based on cases and proposed a modified CBR-cycle to develop and take decisions related to implementation of a certain type of activity, as well as examples to apply a case-based approach to improve steel-melting technology. Essence and distinction of the proposed updated CBR-cycle from the sample process and also scientific topicality of the study is as follows: taking into account DM participation, new method to adjust implemented problem solution and regular updating of a case base by deleting outdated cases, and also taking into account unknown case situation. Presently, case-based decision-making systems are being developed and investigated in various fields of activity, in particular: medical care (SB RAS) [3], disaster management [4, 14], project to create complex industries [15], logistics [16], IT [17] and others. The results obtained in these areas have shown the viability of the case-based approach for the digital support of complex human activities. The development of case-based control systems for difficult to formalize technological processes has gained a particular topicality.

### LITERATURE:

- Berman A.F., Nikolaychuk O.A., Pavlov A.I., Yurin A.YU. Sistema podderzhki prinyatiya resheniy po preduprezhdeniyu i likvidatsii tekhnogennykh CHS na osnove pretsedentnogo podkhoda // Tekhnologii tekhnosfernoy bezopasnosti: Internet-zhurnal. – Vyp. 5 (51). – 3.11.2013. – 9 p.
- 2. Aamodt A., Plaza E. Case-Based reasoning: Foundational issues, methodological variations, and system approaches // AI Communications. 1994. №7(1).
- Yudin V. N. Metody intellektual'nogo analiza dannykh i vyvoda po pretsedentam v programmoy sisteme podderzhki vrachebnykh resheniy / V. N. Yudin, L. Ye. Karpov, A. V. Vatazin // Al'manakh klinicheskoy meditsiny. — 2008. — № 17-1.
- Yurin A. YU. Sistema podderzhki prinyatiya resheniy dlya preduprezhdeniya i likvidatsii tekhnogennykh chrezvychaynykh situatsiy na osnove pretsedentnogo podkhoda / A. YU.Yurin, A. I. Pavlov // Sb. statey molodykh uchenykh Irkutskogo nauchnogo tsentra Sibirskogo otdeleniya RAN, 2013, vyp. 2. — P. 24–25.
- 5. Kolodner J. Case-based Reasoning. Magazin Kaufmann. San Mateo. 1993. 386 p.
- Wettschereck and Aha, 1995] Wettschereck D. and Aha D.W. Weighting features. // First International Conference, ICCBR-95 Sesimbra, Portugal, October 23-26, 1995 Proceedings. - 1995. - pp 347-358.
- 7. Branting L. K. Learning FeatureWeights from Customer Return-Set Selections. // Knowledge and Information Systems. - 2004. - Volume 6, Issue 2, pp 188-202.
- 8. Leake D. B. CBR in Context: The Present and Future. // Case-Based Reasoning: Experiences, Lessons, and Future Directions. AAAI Press/MIT Press. 1996. pp. 3-30.
- 9. Chernyy S.G. Primeneniye case-based reasoning dlya podderzhki prinyatiya resheniy. // Vestnik KHTNU. Informatsionnyye tekhnologii. 2010. № 2 (38). pp. 336 342.

- Bredikhin K.N., Varshavskiy P.R. Arkhitektura sistemy raspredelennogo vyvoda na osnove pretsedentov dlya intellektual'nykh sistem. // Programmnyye produkty i sistemy. - 2011. -№1. - pp. 50-53.
- 11. Novikov D.A. Metodologiya upravleniya. M.: Knizhnyy dom "LIBROKOM", 2012. 128 p.
- 12. Whatson J., Marir F. Case-based reasoning: A review. The knowledge Engineering Review, 1994, 9(4), pp. 327-354.
- 13. Varshavskiy P.R. Metod poiska resheniy v intellektual'nykh sistemakh podderzhki prinyatiya resheniy na osnove pretsedentov / P.R. Varshavskiy, R.V. Alokhin // International Journal "Information Models and Analyses" Vol.2 / 2013, Number 4. P. 385-392.
- 14. Problemy informatsionnogo obespecheniya dolzhnostnykh lits na pozhare i varianty ikh resheniya / Ye.A. Meshalkin, A.G. Krylov, V.T. Oleynikov, A.P. Abramov // Pozharnaya bezopasnost'. 2002. №5. P. 58-62.
- 15. Lysenko D. E. Avtomatizirovannyy sintez modeley tekhnologicheskikh protsessov na osnove pretsedentnogo podkhoda // Nauchnyye vedomosti Belgorodskogo gosudarstvennogo universiteta. Seriya: Ekonomika. Informatika. – 2014. – №1-1 (172). URL: https://cyberleninka.ru/article/n/avtomatizirovannyy-sintez-modeley-tehnologichesk ih-protsessov-na-osnove-pretsedentnogo-podhoda (retrieved: 25.02.2019).
- Belyakov S.L. Pretsedentnyy analiz logisticheskikh operatsiy v geoinformatsionnykh sistemakh / S.L. Belyakov, L.V. Gordiyenko // Programmnyye produkty i sistemy. – 2008. – №4. – P. 114-117.
- Avdeyenko T.V. Sistema podderzhki prinyatiya resheniy v IT-podrazdeleniyakh na osnove integratsii pretsedentnogo podkhoda i ontologii / T. V. Avdeyenko, Ye. S. Makarova // Vestn. Astrakhan. gos. tekhn. un-ta. Ser. upravleniye, vychisl. tekhn. inform., 2017, № 3, pp. 85–99. URL:http://www.mathnet.ru/links/3a50d1d53629aecb38ceb39a88c42824/vag tu495.pdf (retrieved: 05.01.2020).











