



Uniwersytet Ekonomiczny  
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**Mariusz Sangórski**

## **DOCTORAL THESIS SUMMARY**

### **Employee Suggestion System as the method of improvement in energy efficiency in a production company**

Model of the Employee Ideas Management System in the context of KGHM  
Polska Miedź S.A.

*Master's thesis written under the supervision of:*

***SUPERVISOR:***

**Prof. UE, dr hab. Arkadiusz Wierzbic**

*in the Department:*

Katedra Zarządzania Produkcją i Pracą

***ADDITIONAL SUPERVISOR:***

**Leszek Krawczyk**

Centrum Badawczo-Rozwojowe CUPRUM

KGHM Polska Miedź S.A.

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## Introduction

This work results from the "Implementation Doctorate" program, an initiative to foster collaboration between the scientific and socio-economic communities<sup>1</sup>. There are four parties to the program: the Ministry of Education and Science acting as the sponsor, the Wrocław University of Economics, which is the scientific community, KGHM Polska Miedź S.A. being a representative of the economic and social side interested in solving the problem and a PhD student interested in improving his professional and scientific competences.

Following the interpretation of the Ministry of Education and Science<sup>2</sup> and the definition contained in the Act on Academic Degrees<sup>3</sup>, this implementation thesis is a doctoral dissertation which is a designing thesis describing an original solution to a problem (by implementation - MS) that can be applied in practice, being a solution as a result of research applications<sup>4</sup>. To illustrate the relationship between the individual elements of the scientific activity conducted as part of the implementation doctorate, the author presents them as a business process map.

The implementation problem is a praxiological<sup>5</sup> research problem of the practice of science (also known as a practical problem), the solution of which is provided by applied (application) research, "understood as work aimed at acquiring new knowledge and skills, to develop new (...) processes (...) or making significant improvements to them."<sup>6</sup> This paper presents a way to improve an organisation by implementing new procedures.

The original topic of this work, "Employee Suggestion System as the method of improvement in energy efficiency in a production company", was related to the initially identified business problem. This is a small, compared to the desired, number of placed and used opportunities to improve energy efficiency in the enterprise employing the doctoral student. When deciding to solve this problem with the scientific method, the employer sought a way to increase its cost-effectiveness. Today (end of the 2022 year), solving this problem may contribute to the company's survival in the face of the growing deficit of energy availability and the costs of obtaining it, including environmental costs, as the proposed solution to the problem is a systemic approach to getting information on possible improvements in the area of energy management. During system analysis of the context of KGHM Polska Miedź S.A., the author

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<sup>1</sup> Ustawa z dnia 30 kwietnia 2010 r. o zasadach finansowania nauki. Art. 26 ust.3f, 3g.

<sup>2</sup> The answer of the Ministry of Science and Higher Education to the question: "What is the result of the project? Are there any indicators? How will they be verified?" as part of the FAQ session.

<sup>3</sup> Ustawa z dnia 14 marca 2003 r. o stopniach naukowych i tytule naukowym oraz o stopniach i tytule w zakresie sztuki. Art. 12.1.3 oraz 13.1

<sup>4</sup> Ustawa z dnia 20 lipca 2018 r. – Prawo o szkolnictwie wyższym i nauce, art. 4 ust. 2.

<sup>5</sup> Related to praxeology, a field of science with effective action (praxiology - the study of human conduct, or the science of efficient action - <https://dictionary.apa.org/praxiology> )

<sup>6</sup> Ustawa z dnia 20 lipca 2018 r. – Prawo o szkolnictwie wyższym i nauce, art. 4 ust. 2.

identified a more extensive problem: the lack of a uniform system throughout the organisation that would support the release and use of the intellectual potential of employees to improve the organisation. Despite the greater than the original scope of the implementation problem, the author solved it in the same way by designing the "Model of the Employee Ideas Management System in the context of organisational conditions of KGHM Polska Miedź S.A.". The subject of the doctoral thesis defined in this way fits perfectly into the development strategy of KGHM Polska Miedź S.A. It also may contribute not only to the improvement of energy and cost efficiency of the enterprise but also to the increase of its total value through implementing a uniform innovation ecosystem throughout the whole organisation. This issue is illustrated by a business motivation model based on the KGHM Strategy.

As A. Wierzbic observed, the management system's compliance with the strategic goals of the organisation in which it operates is a necessary condition for its business value, expressed through practical usefulness<sup>7</sup>.

This paper provides two products. The first is a general model of a universal system for managing employee ideas (also called Employee Suggestion System, **ESS**<sup>8</sup>), not only in energy management but also in every field, location and industry. The second product is a detailed Employee Ideas Management System (also called Employee Suggestion System, **ESS**) model tailored to the context of KGHM Polska Miedź S.A., designed based on the general universal model. The adopted design approach showed how the available model could be used to build a model dedicated to a specific organisation. What distinguishes this work from other studies is:

- firm reliance on the foundations of effective management described, among other things, in the ISO 9000 standard;
- strong focus of work on the greatest possible practical usefulness of the described solutions aimed at achieving business value while maintaining the maximum cost-effectiveness of the potential implementation;
- the depth and interdisciplinarity of the system analysis of the available information, reflected in the method of organising information on the determinants of the success of the

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<sup>7</sup> Wierzbic, A. (2013). System zarządzania oparty na znormalizowanych wymaganiach jako czynnik wzrostu i rozwoju małych i średnich przedsiębiorstw. Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu. ISBN 978-83-7695-295-6. S. 169.

<sup>8</sup> The Polish name of the system reflects its function. In English this kind of systems are named as: Employee Suggestion System, Employee Suggestion Scheme, Idea Management System. In this summary all these names can be used for the same system.

idea management system and expressing them using the requirements<sup>9</sup> for the employee suggestion system;

- focus on the maximum objectification of the provided information with business value, expressed in generating judgments based on explicit evaluation criteria;
- applied systemic approach to modelling the layout of business processes aimed at achieving the intended result in a fully controllable manner - using the IDEF0 method and described using the BPMN notation;
- description of the idea management mechanism focused on the workflow, driven by business rules and managed based on facts (objective, good Key Performance Indicators, KPI).

The implementation problem reflects the main research question: "What is the mechanism enabling the effective functioning of the employee ideas management system, and what is its understandable description?" in KGHM Polska Miedź S.A. It was solved by the scientific method by answering specific research questions:

1. Does the main research question reflect the research gap?
2. How to design a management system?
3. What should an effective management system consist of, i.e. what elements and relations should it contain?
4. What should the correct design of the management system look like?
5. What are the features of an effective management system?
6. What have been directly identified as determinants of success related to the ESS? What is their impact on success?
7. What determinants of success have been identified, which may refer to the system of managing employee ideas indirectly (i.e. they are related to issues not addressed in research on idea management systems or only signalled)?
8. What are the requirements based on the identified determinants?
9. What is the general description of the mechanism for the effective functioning of the Employee Ideas Management System?

The implementation problem was solved with the use of the scientific methods<sup>10</sup>:

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<sup>9</sup> Requirement - need or expectation that is stated, generally implied or obligatory (ISO 9000:2015, 3.6.4). In this summary term „requirements” looks like overused but it is the core of the whole thesis, where „requirement” is the obligatory need necessary to achieve intended result.

<sup>10</sup>Apanowicz J. (2000). Metodologiczne elementy procesu poznania naukowego w teorii organizacji i zarządzania. Gdynia, Wydawnictwo Diecezji Pelplińskiej „BERNARDINUM”. ISBN 83-910869-9-2. s.24-25, 109-110.

- Analysis - as a process of decomposing the concept of managing employee ideas into system components and the relations between them, which allowed for detailed studies of separate aspects;
- Deduction - the essential element of which is adopting the perspective of seeing all sets of activities as business processes;
- Induction - as the derivation of general conclusions concerning specific systemic aspects, based on the detailed knowledge obtained during the studies - with the awareness of the area of uncertainty derived from induction of findings;
- Synthesis (logical construction) - leading to the combination of elements from the analysis, enriched with new, resulting from the studies, content to reveal new properties of a synthetic being (employee ideas management system).

The dominant research technique was the examination of documents<sup>11</sup>. Answers to additional questions were provided after the corresponding theoretical research: literature and system research. During the literature research author analysed 18 models of managing employee ideas and over 500 occurrences of information related to success factors expressed in 27 tables. The author designed, tested and optimised 18 business processes as part of the studies.

The foundation of the work is the description of the mechanism. The critical element, apart from the workflow, is the set of requirements - qualitative and quantitative. The requirements fulfilment implies the system's success under consideration, i.e. the achievement of predetermined business benefits. Each chapter begins by recalling research questions answered in a given chapter. The author decided to use this convention of presenting information because it reflects the process approach that the author uses in every area of his activity due to the practical usefulness confirmed by his experience. This approach allows us to look at each activity as a business process to achieve the intended effect. It means that before the initiation of the process, the purpose and requirements for the procedure or its result must be determined. In this work, the author created the content of each chapter as a product of the business process. This process begins with knowledge leading to answers to the questions asked at the beginning of the chapter. A requirement for the cycle is rigour in applying the scientific method; conditions for the product of the process, i.e. the knowledge documented in the chapter's

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<sup>11</sup> The study of documents here, referred to as a research technique, is sometimes described as a research method - the analysis of historical data. For example: Koźmiński A., Latusek-Jurczak D (2011). *Rozwój teorii organizacji*. Oficyna a Wolters Kluwer business. s. 31.

content, is its substantive correctness, comprehensibility and practical usefulness in the context of achieving the primary goal of the doctorate.

An integral part of the work are annexes containing materials that may help examine organisational maturity in managing employee ideas, researching opinions on rewards, and making decisions regarding implementing an idea management system. The last appendix contains a general concept of the implementation approach to ESS implementation, containing a list of activities necessary to carry out the practical implementation, each with a disclosed business purpose.

The overriding requirement for work is to make it as practical as possible. As the work presents the subject of the study (description of the system model), the requirements will be met only when the lower-order requirements - regarding the report and the narrative (model) issue are met. The description requirements are as follows:

1. The description should be complete from the point of view of its practical usefulness, i.e. it should be sufficient for developing an approach to implementing the system in the organisation. This completeness will be expressed by presenting all system elements necessary for effective functioning (the main components are processes and the requirements that apply to them);
2. The description should make it possible to understand the functioning of the used mechanisms and leave no doubts as to what the individual elements of the system are, what is the purpose of their existence (functioning), what is their place in the value-building chain and what relations connect the various elements of the system.

Requirements for the subject of description (system) are as follows:

3. The system should be designed so that its functioning ensures the achievement of the following business goals (of value from the perspective of the organisation)<sup>12</sup>:
  - a. Objective 1: achieved direct business benefits resulting from the use of employee innovation - in the form of implemented ideas;
  - b. Objective 2: earned benefits in the area of innovation, resulting from the disclosure of knowledge the organisation has not had easy access to - in the form of documented but unimplemented ideas;
  - c. Objective 3: more significant involvement of employees in their work, resulting from increased motivation to participate in the improvement of the organisation - by obtaining a real impact on its functioning;

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<sup>12</sup> Dekier, Ł., Grycuk, A. (2014). PROGRAMY SUGESTII PRACOWNICZYCH, Doświadczenia polskich przedsiębiorstw. Stowarzyszenie Lean Management Polska, Wrocław.

4. The system should be possible to implement in the organisation under consideration (KGHM Polska Miedź S.A.);
5. The system should be designed so that its correct implementation (that is, the implementation of all the described mechanisms so that the requirements of their effective functioning are met) will bring the expected benefits.

Each element of the dissertation has been developed in such a way as to fulfil the requirements mentioned above. The content of the work is included in the introduction, six chapters and conclusion, and five appendices. The work contains 101 tables and 69 drawings, 18 of which are process maps. The work also describes over 100 KPIs, which, organised in the "Measure and monitoring plan" following the presented pattern, will allow for collecting objective data necessary to manage the system's effectiveness based on facts.

### **Chapter 1 Managing employee ideas**

In the first chapter, the author described the historical aspect of idea management and introduced this issue in the business and functional context, from the perspective of leading management concepts, international standards and research related to them. In the chapter, the author generally described several popular management concepts, including TQM (Total Quality Management), LEAN, KAIZEN, KAIZEN TEIAN, EFQM and the approach described in the ISO 9000 family of standards to show how the system, which is the subject of the doctoral dissertation, takes into account the critical postulates of these, considered to be practically useful and commonly used ideas.

These postulates are<sup>13</sup>:

- focus on ensuring that the requirements are met to achieve the customer's desired benefit (TQM);
- focus on consciously avoiding waste (LEAN);
- continuous, systematic, evolutionary improvement as an element of organisational culture (KAIZEN);
- improvement as a result of using employee improvement suggestions (KAIZEN TEIAN)
- common goal and direction and effective performance of activities aimed at building sustainable value of the organisation for its stakeholders (EFQM);
- quality management principles expressed in ISO 9000.

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<sup>13</sup> The presented postulates are an author's, synthetic paraphrase of the described concepts.

The uniqueness of the message, which is crucial for the comprehensibility of the content of the work, serves to organise conceptual issues related to the broadly understood issues of knowledge management, innovations and ideas. The author analysed the concepts to show their distinctiveness and the relations in which these concepts remain. This analysis was placed in a normative context for the consistency of the presented content with international standards.

## **Chapter 2 Designing management systems**

In this chapter, the author using domain terminology described the subject and process of designing a management system (including the methods of modelling and describing systems and processes) along with the corresponding requirements.

The design issue is a *system* of managing employee ideas, "*manifesting its existence through the synergistic interaction of elements*"<sup>14</sup>, the function of which is related to the intended business goal: achieving the desired benefits resulting from the use of the intellectual potential of employees. If the system could perform its function, it must have an appropriate structure - it should consist of proper elements connected by good relations. Therefore it should be designed in such a way that its implementation (following the design) enables the achievement of the planned goals and is described in a manner understandable to the addressees ( decision-makers and implementers)<sup>15</sup>.

The primary assumption of this work is that there are factors contributing to the success (identified as the achievement of the intended results) concerning the decision to implement and the implementation of the system itself. Suppose the system is designed so that its operating mechanism supports the occurrence of success factors and will bring the expected results. The described model of the system is in its central part a design of a mechanism in its fundamental layer based on "Deming's wheel"<sup>16</sup>. This idea (also called PDCA<sup>17</sup>) characterises the value creation process improvement cycle, describing the leading sequence of planning, executing the plan, checking the results and making improvement decisions. To emphasise the business nature of the described mechanism, the author placed it in the context of Porter's "value creation chain"<sup>18</sup>.

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<sup>14</sup> Bellinger G., Outsight, Internet – cited by Cempel C., Teoria i inżynieria systemów.

<sup>15</sup> The author's ambition was to do the work as easy to read as possible. Still, the complexity of the matter requires the reader both intellectual discipline and basic knowledge of management.

<sup>16</sup> W. E. Deming (1950). Elementary Principles of the Statistical Control of Quality, Japanese Union of Scientists and Engineers, 1950.

<sup>17</sup> Plan, Do, Check, Act

<sup>18</sup> Porter, M. E. (1998). Competitive advantage: creating and sustaining superior performance: with a new introduction.

The primary element of the system is the process, identified in the doctoral dissertation as a business process, "*a specific set of business activities representing activities (including the flow and use of information and resources), the execution required to achieve the business goal*"<sup>19</sup>. The proposed system's essential element is the primary process of managing employee ideas - an ordered sequence of actions aimed at achieving specific benefits. A process can also be identified according to ISO 9000<sup>20</sup>, which is defined as "a set of interrelated or interacting activities that use process inputs to deliver an intended result"<sup>21</sup> – also known as "output, product or service". In this perspective, the primary process of managing employee ideas can be seen as a mechanism that uses the process's input, the undocumented notion of improving the organisation, to create the output - the benefit of using the concept. The primary process perceived in this way is generally characterised; therefore, the author, using the process approach to management, decomposed it into lower-order, operational management processes, which are its sub-processes from the perspective of the primary process. Using the IDEF0<sup>22</sup> methodology, treating the process as an abstract entity, which can be fully described using the terms: input, output, control/constraints, and mechanism (Input, Output, Control / Constraints, Mechanism - ICOM), the author designed both the primary process and its sub-processes. All processes are described in detail and illustrated with maps made using BPMN<sup>23</sup> notation.

One of the elements that characterise all processes deserves special attention - these are the "constraints" of the process, expressed in business rules that determine how each process is carried out. The business rules reflect the requirements. The fulfilment of requirements determines the effectiveness of each cycle, which are a derivative of the determinants of the success of the suggestion system identified during the literature research.

According to the rules of the "Implementation doctorate" program, the subject of the doctoral dissertation must solve the problem of the author's employer. It must be possible to use in practice. The condition of the solution's usefulness is met by providing a model, the implementation of which will solve the implementation problem - the description of which is factually correct<sup>24</sup> and understandable to its addressees.

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<sup>19</sup> OMG.org. (2014). Business Process Model and Notation (BPMN), pp. 499.

<sup>20</sup> ISO 9000 is a glossary of the ISO "9000" family of standards, of which ISO 9001 is considered the benchmark standard for process management.

<sup>21</sup> PN-EN ISO 9000:2015-10. Systemy zarządzania jakością. Podstawy i terminologia. 3.4.1.

<sup>22</sup> "Icam DEfinition for Function Modeling", where ICAM is an acronym of the "Integrated Computer Aided Manufacturing". Presley A., Liles D.H. The Use Of IDEF0 for the Design And Specification of Methodologies.

<sup>23</sup> BPMN - *Business Process Model and Notation*. A conceptual system and graphical notation that allows you to model and document in a visual form business processes and procedures; it also allows for modelling and documenting cooperation between organizations.

<sup>24</sup> That is, compliance with the unique requirements, correct in this case, means: "possible to be implemented in practice, having the potential to bring the expected benefits".

### **Chapter 3 Determinants of the success of the employee ideas management system**

In the third chapter, the author described the method and results of the literature study, intended to identify the research gap and deepen the knowledge of the broadly understood issues of managing employee ideas, including the identification and exploration of non-obvious perspectives, as well as the identification and collection of knowledge necessary to design a system for managing employee ideas, including the determinants of the success of management in general and the management of employee ideas in particular.

To falsify the research gap hypothesis,<sup>25</sup> the author analysed 18 models of employee suggestion systems to check:

- whether and with what models are the systems for managing employee ideas described in the literature;
- what extent are the models described in the literature helpful for the implementation.

The identified models present various approaches to idea management: from general to detailed functional concepts, from concepts representing a broad organisational and business context to resource-task "mixes", from chronologically ordered stages and phases to detailed descriptions of the sequence of actions. Some models are described at a high level of generality, some have different mixed-up levels of detail, and some combine operational points with strategic generalisation. The author found the all-studied models helpful. The "simple" models allowed the author to look at the system in a way that allowed him to understand how the overriding mechanism governing the primary process works. Detailed models allowed analysing of actions or individual activities to reveal the relationships that may affect the system's effectiveness. All the studied models under the applied convention seem to be complete and substantively valuable; however, none of them presents a process approach. As a result of literature research, the author confirmed that the postulated research gap is an objective gap.

The second part of the research aimed to identify the determinants of the employee suggestion system's success (or failure). During literature research, the author identified over 500 groups of information on the determinants of success, which are either a description of factors affecting the system's effectiveness or a description of groups of elements or considerations about them. The system analysis led to organising the information and defining 96 special requirements, which were then used to formulate business rules, constituting the

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<sup>25</sup> The hypothesis that there is no process-oriented, goal-oriented and requirements-defined model ready for implementation or adaptation of the employee ideas management system was confirmed in the literature research.

main guidelines describing how activities and activities undertaken within individual processes should be organised and carried out.

#### **Chapter 4 Key System Requirements**

In the fourth chapter, the author described the system analysis results of the accumulated knowledge, i.e. the critical requirements for the employee ideas management system - universal and dedicated. The chapter defines the primary necessities (i.e. sets of detailed requirements) of the system (including its processes) for managing employee ideas. It should be remembered that exact requirements ( possible to verify their fulfilment with zero-one criteria) are not business rules. These were defined in the next stage of the system analysis, comprising completeness, categorisation and evaluation criteria, and decision tables (catalogues of possible actions).

The starting point for defining the requirements was to describe business goals that could be achieved by implementing an ESS. For this purpose, the author has developed a structure of benefits and source causes to influence the identified causes through the mechanisms to meet the requirements.

The author divides achievable benefits into direct monetisable - when a specific financial benefit is an easily visible effect of improving the organisation - and indirect monetisable - when the economic benefit is achieved but is not easy to observe. The second group of benefits includes employee satisfaction, an improved business process, an improved specific environmental aspect and the possibility of using the revealed creative potential.

The desired benefits of implementing and operating a suggestion system are its goals. The precise definition of goals is essential in the system design process because the system and procedures must be purposefully oriented.

Thanks to the knowledge of the system's goals, the information on the determinants of success collected at the stage of literature research was organised in two sets, firstly by assigning each instance to one of the three main elements of the Dijk & Ende Creativity Transformation Model (CT Model)<sup>26</sup>. The CT model was chosen for its simplicity and completeness, as it combines aspects of the so-called "Soft" associated with the broadly defined "organisational culture" and informal practices and "hard" factors related to the organisational structure and formalised procedures.

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<sup>26</sup> van Dijk C., van den Ende J. (2002). Suggestion systems: transferring employee creativity into practicable ideas.

The second stage of the system analysis of information on the determinants of success led to the determination of over 500 occurrences of groups of factors influencing the effectiveness of the ESS system at the stages of the value creation chain. From over 500 disclosed groups of information on success factors (also as derivatives of failure factors), 164 groups of information on "structural" factors influencing the effectiveness of the ESS system were distinguished. There were aggregated into 112 groups with 59 special requirements assigned to seven aspects that were developed "Structural", including twenty-six overarching "process" requirements (describing what a process must be to produce the desired result).

From over 500 groups of information on the determinants of success, 246 groups on "cultural" issues were also identified, of which the leading aspect of top management involvement in the literature was broken down into 16 special requirements and the communication aspect into 21 detailed requirements grouped into four groups of special requirements.

The processes of validation and rewarding were also analysed. The pooled results of the system analysis were arranged in the form of 34 "motivational" requirements, including 23 motivators and 11 demotivators. All the identified special and detailed requirements are critical as derivatives of success factors. Failure to meet one requirement means an immediate reduction in the system's effectiveness<sup>27</sup> (concerning the maximum value that reflects the fulfilment of all needs), in the worst case, to zero (although usually in a longer time horizon).

As part of the analysis of the rewarding process, the author considered in detail the motivational function of this process, especially in generating employees' internal motivation.

### **Chapter 5 Design of the universal system**

Based on a process approach consistent with the Business Process Trends<sup>28</sup> perspective, the author described a universal, applicable (after adaptation) in every organisation and every ESS field.

In chapter five, based on previously defined requirements, the author explained 34 requirements for processes (including 9 for each process). The author has assigned actions to each of the requirements - the implementation of measures (direct or indirect) in the process should serve to meet a specific requirement. The description of activities that meet the requirements is business rules that indicate the actions by which a given requirement is to be

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<sup>27</sup> The system's effectiveness as the ability to achieve the intended result can be considered zero-one. However, suppose the intended effect is expressed as a set of items. In that case, the effectiveness can be graded by defining it by the ratio of achieved results to all results planned to be completed.

<sup>28</sup> <http://www.bptrendsassociates.com>

completed. The models of the ESS system (equated with the primary process in its system perspective), both universal and dedicated, have been designed considering the rules reflecting the defined 34 special requirements.

The condition of managing the primary process (and, therefore, each sub-process) based on facts required the determination of a measure based on which it would be possible to assess whether a given process is being implemented effectively. The author proposed 35 key success measures, a universal basis for designing specific key process performance indicators (KPIs), of which the author defined over 100 for creating a dedicated system.

It is important to note that the proposed KPIs are exemplary, and their list is not exhaustive. To ensure the completeness of the description of the system, the author presented it based on an information structure including:

- basic functionalities of the ESS system are shown in the diagram of use cases;
- activities and relations between the owners of the system and the primary process are illustrated with a map;
- the primary process in the value creation chain is illustrated on the map of the primary process of managing employee ideas;
- the primary process of information flow is shown in the figure;
- descriptions of sub-processes presented in 7 tables and two maps.

Significant and not quite exposed in the literature are the issues described in detail: ownership relations in the system and processes, information flow - mainly addressed to the author of the idea - and issues related to measurement and process monitoring.

The general model is supplemented by supporting processes for the effectiveness of the systems as necessary as the primary process and its operational sub-processes.

## **Chapter 6 Design of a dedicated system**

Based on the universal model of the ESS, in chapter six, the author presented the result of its adaptation to the KGHM context, which is a solution to the implementation problem. The description of the dedicated ESS was made with the use of BPMN symbols at the algorithm level focused on process workflow. First, the business, management, and normative and organisational context of the enterprise employing the work's author were introduced. Then the primary process of managing employee ideas is presented - keeping the business perspective, with all inputs and outputs of all sub-processes of the primary process exposed. The main process and the sub-processes are described following the IDEF0 (ICOM) methodology to facilitate understanding of the workflow within the primary process. Good management and

operational communication plan are also presented - ready to use, even without modification. Subsequently, the author described in detail individual operational sub-processes, assigning to each of them related requirements, a map showing the workflow in the process and detailed measures of the effectiveness of the process. Below is a list of the operational sub-processes and supporting functions. A description of those elements of a given process determines its diversity and importance in the value creation chain.

<b>Type of process</b>	<b>Process name</b>	<b>Particular elements or requirements</b>
<b>Operational sub-process</b>	Idea submission and verification	1. Criteria for evaluating an idea as "correct." 2. Form for documenting the idea
	Idea qualification	Questionnaire supporting the process of qualifying an idea
	Idea evaluation (optional - consultation)	Criteria for evaluating a good idea: step 1 - potential identification; stage 2 - parameterisation of the potential; stage 3 - selection of a recommendation (from a closed catalogue)
	Decide on an idea	Decision table (closed catalogue of possible decisions)
	Idea implementation validation (optional process)	-
<b>Supporting process</b>	Communication with the author	Examples of idea statuses in the information system
	Providing support	-
	Improving the process	Description of process triggers
	Rewarding	Essential process requirements related to its motivational aspect
	Measuring and monitoring	An example of the scope of the measurement and monitoring plan

## Conclusion

At the end of the dissertation, the author described how filling the research gap made a solution to the implementation problem and, in this context, pointed to the novelty of the proposed design solution. The work's originality is related to developing the available information on the determinants of the success of the suggestion system and using it as a source of system requirements. It is innovative to use the requirements to design the system mechanism and the business rules that control its operation. In this way, the performance of the described activities following the procedures presented gives the desired result of simple economic benefits and increased employee involvement. The author presented the general model of the system and the detailed model - complete from the process perspective and, as such, ready for use. It uses systems engineering to design the model that allows for experimenting with it and testing its resilience to potential incidents. As a result, the proposed model is optimised in this respect.

The primary value of the work is to present a method of designing a management system by basing it on facts: knowledge about success factors and standard systems engineering techniques. The author showed how to develop system requirements and design processes to meet them - on a broad and detailed level. Another value of the work, also related to the principle of making decisions based on facts, is a pervasive measurement system illustrating the method of extracting information on the effectiveness of processes for effective management.

At the end of the thesis, after considering the limitations of the doctoral dissertation, the author pointed out the possibilities of empirical research on the actual effectiveness of the ESS implemented according to the proposed model and system study focused on, among other things, the operational management of indicators. The work is complemented by a usable tool for assessing organisational maturity - simplified, proprietary, related to "process" maturity - and extended, related to maturity in suggestion management (as an adaptation of F. Lasrado's work<sup>29</sup>).

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<sup>29</sup> Lasrado F., Arif M., Rizvi A. (2014). Employee Suggestion System Assessment Model: The Best Practice Scenarios. *Journal of Strategic Human Resource Management*, Volume 3 Issue 2 June 2014.  
Lasrado F., Gomiscek B. (2015). A tool to measure maturity of an employee suggestion scheme. *Management and Production Engineering Review*, vol. 6, no. 2, pp. 4-13.