TECHNOLOGY OF THE TRAINING COURSE BASED ON THE MANAGING TVET INSTITUTION COMPUTER SIMULATOR

MANAGING TVET INSTITUTION

Moscow 2016

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About the Training

The training course based on "Managing TVET Institution" computer simulator was developed by the Moscow School of Management SKOLKOVO to provide management teams of TVET institutions with skill set necessary for efficient management practices. It involves the use of best practices, approaches and expert information to help participants broaden their horizons in the field of TVET education.
The training is based on a computer simulator with an integrated simulation model of a TVET institution in a regional educational services market. The programme simulates the effects of administrative decisions made by the participants. This technology enables acquisition of the necessary knowledge and skills by participating in games and competitions. The simulator was developed using web technology, and is available on the Internet, providing the opportunity for mass education based on it.

Target Audience

The course is designed for management personnel of TVET institutions, such as college directors, their deputies and key employees involved in the decision-making process. In addition, it may be interesting and useful for employees of ministries and departments of the TVET system, employers and members of associations providing jobs in the field of TVET.

Training Format

The training is carried out in a game format and requires team work from the participants, as well as competition between a number of teams.
Composing teams of employees working in the same institution helps to develop and strengthen the skills of team work, as well as to unite its members. If the training involves representatives of different institutions this approach facilitates the exchange of experience between participants, which also has a positive educational effect.
The training covers a range of activities.

- **Work with a computer simulator.** The teams analyse reports on the work of a virtual educational institution and its environment, and take management decisions within the framework of the simulation model.

- **Performance of tasks.** The teams answer questions about the current situation in a virtual educational institution and its external environment, as well as describe their plans and objectives relating to the development of the institution. This gives participants an opportunity to structure their understanding of the institution's activities and to take an intelligent approach in making management decisions.

- **Preparation of reports and team presentations.** The teams prepare reports, which describe the results achieved, problems encountered, and plans for the future. Then they present their reports and answer questions from the facilitators and members of other teams.

- **Analysis of rating and results.** The teams analyse their work during the training course; in particular, how effective the chosen strategy was and whether it helped to achieve the planned results; which decisions were correct, and which were wrong.

The duration of the course is 2 days. Each day includes 8 hours of active work. After completing the training course, participants are given access to its results. This allows them to review the results of the game again, analyse their own actions, make additional conclusions, and take a look at the results from a different angle.

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Specific and Unique Features of the Training Course

Тренинг обладает следующими уникальными особенностями:

- **Integrated approach to management.** The training involves the use of an integrated approach to the main activities of the head of an educational institution, including management of the educational process, finance, and human resources, addressing economic issues, building relationships with partners, the government, competitors, etc.

- **Active interaction and communication**. Working on the tasks set during the training the participants constantly interact with their team members, as well as with the other teams (during plenary discussions) and with the facilitators. This makes it possible to use the training course as for the exchange of experience between representatives of various institutions.

- **Fully packaged product (ready-to-use, standalone course).** The product technology is designed to allow project partners to train their own facilitators and moderators to hold training courses independently with the use of the suggested methods and recommendations.

- **Adaptation possibilities.** The training can be easily adapted to a variety of formats and specific conditions. The scenario of the training course and its technology can be adjusted in accordance with requests from the organisers and the specific characteristics of the target audience.

- **Visualisation.** The training uses a variety of charts, maps, tables, as well as the infographics of the simulator interface, which helps the participants to easily and quickly process large amounts of information.

Testing of the Training Course

The training course has been successfully tested with the participation of TVET managers. Educational activities to test the training course were carried out in Armenia, Vietnam and Italy.

Before each trial the training course was adjusted to take into account the specifics of the audience and the requests of the organisers. Upon testing completion, the organisers and participants made comments and suggestions, which helped to improve the technology.

In a number of cases, the trial participants practised transferring the training technology to standalone use. The moderators participating in the educational events had previously received appropriate training.

The trial participants believe that the training course is useful for the development of management skills in the TVET system. They also made a number of proposals relating to the use of the training course in the preparation and evaluation of managers at TVET institutions. Currently, work is being done to implement these proposals.

Training Technology

A special technology was developed for the organisation of the training course, a key feature of which is the possibility of autonomous implementation. This technology is easily reproduced by anyone interested who has passed a brief training course and received the necessary consultation in the process of introducing the simulator into the educational process of a college, institute or training centre.

Схема устройства тренинга

Training Topics

According to the technology, the topics studied by the participants of the training can be divided into several blocks.

Analysis of the institution's environment

- preferences of the population (adults and young people, school leavers);
- requirements of business organisations (large, small and medium-sized businesses, non-profit enterprises, development plans, competency requirements);
- government priorities (priority sectors, funding regulations, government policies); and
- competitors in the field of vocational training.
- launch of a new educational programme;
- 10 steps (select the type, sector, content, etc.).

Monitoring and development of school education programmes

- updating the content of educational programmes (forecast of future requirements for skills, work with the curriculum);
- introduction of modern approaches to learning (ICT technology, advanced training technology, distance learning, individual education plans, modern approaches to content development); and
- assurance of high quality production training.

Financing

- analysis of the institution's budget (reports, trust funds);
- extra-budgetary sources (short-term training programmes, subsidies, government programmes, support from business, fund-raising, a Supervisory Board, federal resources for participation in WS);
- costs (educational level, optimisation of educational programmes);
- external factors (government policies, willingness of students to pay for tuition, etc.); and
- provision of funds for the implementation of the institution's development strategy.

Public-private partnership

- transfer of student services to the private sector; and
- greater autonomy.

Monitoring and evaluation

- educational programmes (a set of indicators);
- students (tests and exams) and graduates (path tracking);
- faculty, service and administrative staff; and
- infrastructure (audit, etc.).

Quality assurance

- recruitment and evaluation of employers;
- alumni survey;
- student survey;
- independent certification centres; and
- application of international and advanced standards in the development of educational programmes.

Accreditation and benchmarking

- comparison of the educational institution with competitors (identification of strengths and weaknesses, analysis of the experience of other institutions).

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10 Technology Content and Components

The training technology includes the following components:

- a computer simulator;
- tasks for teams;
- a game component; and
- organisation, administration and technical support.

The

game part consists of 5 rounds. Each round is dedicated to one of the training topics and covers one year's activity of the educational institution. Three plenary sessions, including reports presented by the teams and an analysis of intermediate results, are provided between the rounds.

Примеры интерфейса симулятора

Computer Simulator

The simulator is a model simulating a TVET institution in the market of educational services. The model runs on a web-based platform that provides a visual representation with the possibility of interacting with it during training.

During the training course, the participants working with the simulator analyse the current situation and make management decisions based on the results of the analysis. Depending on the decisions taken, the simulation model in the simulator changes the game situation, using inbuilt algorithms and interrelations.

The interaction with the simulator is carried out using a set of game interface elements, including ways of making decisions, reports, interactive maps and analytic charts. The interface elements can be divided into several categories.

Analytics. Carrying out an analysis of the institution's external environment by the teams: specialist training in the region (population preferences and the demands of business organisations), government policy at regional level (priority sectors of the economy), competitors' policies (what programmes are being implemented and by whom). At the beginning of the game, some of the information is not available, since the training involves conducting surveys and analyses. The teams must take steps to obtain information (on their own, with the help of agencies or partners).

Management of educational programmes. Creation of new educational programmes (definition of the type of programme, areas and sectors of the economy, training standards, options for theoretical and practical training, etc.) and management of programmes currently offered by the institution (changes in student recruitment, updating the content, evaluation of programmes, etc.).

Partnership. Building partnerships with business and non-profit organisations in order to train graduates that meet the requirements of employers. The simulator proposes three types of partnerships: social partnership, mutually beneficial partnership, and strategic partnership. Each of these types has a unique set of opportunities for an educational institution. Teams can unite in an association and build mutual partnerships.

Important stakeholders. Monitoring compliance by the institution with the requirements of the founder, choosing an organisational form of the institution, creating a Supervisory Board.

Personnel. Management of working conditions for personnel, hiring and dismissing employees, professional development of staff.

Infrastructure. Management of classroom and other premises (buying, selling, renting, improving resource and energy efficiency, maintenance, repairs, etc.), construction of special facilities (a sports centre, a communications centre, etc.).

Material and technical base. Decisions to provide the institution with classroom equipment (computers, multimedia equipment, furniture) and laboratory instruments. The development of the institution's internal computer network and introduction of new software.

Service. Decisions regarding the organisation of cleaning, catering and accommodation for students in the institution, improvement of safety systems (fire and burglar protection).

Competitions, programmes and grants. Decisions regarding the institution's participation in regional, national and worldwide professional competitions, and in competitions for state grants.

PR and media. Choosing channels and ways to advertise the educational institution in the media and at public events.

Contractors and outsourcing. Selection of contractors for the supply of food, construction, and creation of material and technical resources. Decisions to outsource some supporting processes (economic and technical support, accounting, and legal service).

Finance. Analysis of revenue and expenditure items of the institution, search for additional sources of financing (loans, donations).

Rating map. Comparison of the teams based on the results of their work. Reviewing the achievements of the teams.

Map of facilities. Interaction with external organisations and agencies through an interactive map. This allows visual tracking of the changes to the building and the adjacent territory of the virtual educational institution.

* For more information, see the booklet with a description of the Managing a Technical and Vocational Education and Training Institution computer simulator.

Tasks for Teams

In each game round, every team gets a task: a set of questions specified in the presentation and duplicated in workbooks.

Tasks are divided into two parts, depending on their purpose.

- The first part includes questions related to the topic discussed in the round. These help the participants to understand the simulation model, the simulator interface elements, and the logic of going from one to another key aspect of management.
- The second part includes questions to be used in the preparation of reports for plenary discussions. They help teams to structure their reports better, and address all the required issues in them.

Throughout the training course, the participants use workbooks. This helps to involve the teams in the work, facilitates the understanding of the initial situation and the operational aspects of the institution, and allows the participants to get used to the simulator interface and understand what is happening.

Часть 1: ответы на вопросы и принятие решений

‹#›

В разделе «Аналитика» найдите ответы на следующие вопросы:

1. В разделе «Ключевые показатели -> Общий набор»: Укажите, какие направления (крупный бизнес, малый и средний бизнес или некоммерческая сфера) имели самый высокий показатель набора в прошлом году?

2. В разделе «Ключевые показатели -> Пожелания по секторам»: Укажите, какие сектора экономики будут популярными среди выпускников школ в текущем году: В крупном бизнесе? В Малом и среднем бизнесе? В некоммерческой сфере?

3. В разделе «Рынок труда»:

   3.1 Какие сектора экономики имеют самую высокую нехватку специалистов: В крупном бизнесе? В Малом и среднем бизнесе? В некоммерческой сфере?

   3.2 Какие сектора экономики имеют самую высокую потребность в переподготовке: В крупном бизнесе? В Малом и среднем бизнесе? В некоммерческой сфере?

Presentation with a task for the teams (fragment)

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10 Группы аналитических графиков

Группа графиков №1

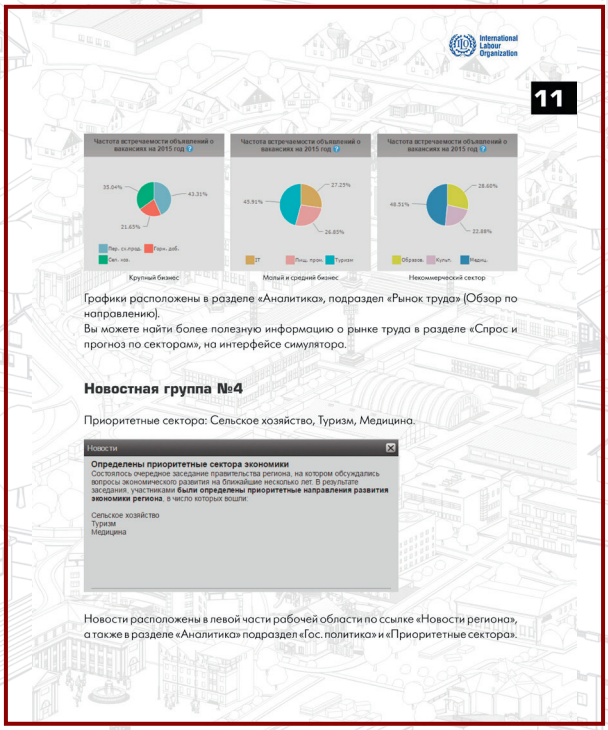
Графики расположены в разделе «Аналитика», подраздел «Население» (Общий набор).

Группа графиков №2

Чтобы найти более подробную информацию о пожеланиях и потребностях населения Вы можете использовать разделы с графиками на интерфейсах симулятора. Графики расположены в разделе «Аналитика», подраздел «Население» («Набор по секторам» и «Пожелания по секторам»). Как вы можете видеть, что они не доступны. Для получения информации о них следовать инструкциям на стр. 13.

Группа графиков №3

Крупный бизнес | Малый и средний бизнес | Некоммерческий сектор



International Labour Organization

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Графики расположены в разделе «Аналитика», подраздел «Рынок труда» (Обзор по направлению).
Вы можете найти более полезную информацию о рынке труда в разделе «Спрос и прогноз по секторам», на интерфейсе симулятора.

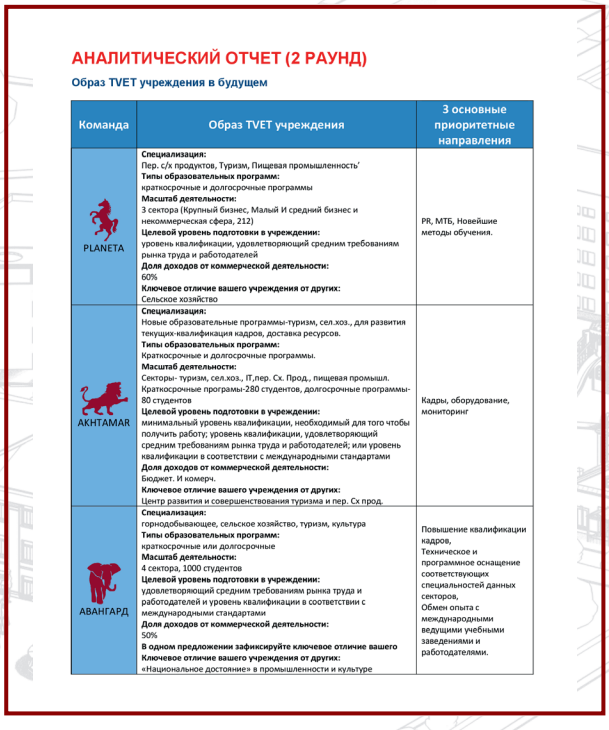
Новостная группа №4

Приоритетные сектора: Сельское хозяйство, Туризм, Медицина.

Новости расположены в левой части рабочей области по ссылке «Новости региона», а также в разделе «Аналитика» подраздел «Гос. политика» и «Приоритетные сектора».

Workbook (fragment)

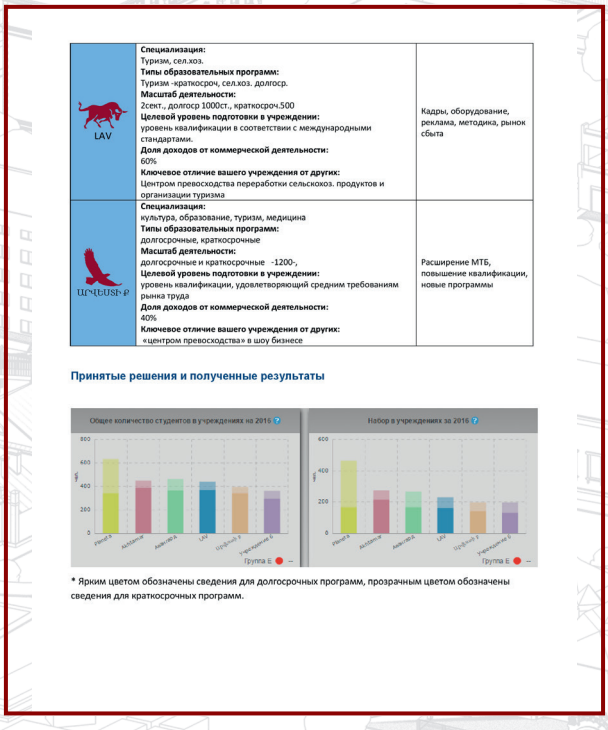
The workbooks contain introductory information about the initial status of the virtual institution, a description of various aspects of managing the institution, instructions for obtaining analytical information from the simulator, and questions from the tasks for each round. At the end of each round, the answers given by the teams are included in the analytical report for this period and made available to all course participants for comparison and analysis.



АНАЛИТИЧЕСКИЙ ОТЧЕТ (2 РАУНД)

Образ TVET учреждения в будущем

Команда	Образ TVET учреждения	3 основные приоритетные направления
PLANETA	**Специализация:** Пер. с/х продуктов, Туризм, Пищевая промышленность' **Типы образовательных программ:** краткосрочные и долгосрочные программы **Масштаб деятельности:** 3 сектора (Крупный бизнес, Малый И средний бизнес и некоммерческая сфера, 212) **Целевой уровень подготовки в учреждении:** уровень квалификации, удовлетворяющий средним требованиям рынка труда и работодателей **Доля доходов от коммерческой деятельности:** 60% **Ключевое отличие вашего учреждения от других:** Сельское хозяйство	PR, МТБ, Новейшие методы обучения.
AKHTAMAR	**Специализация:** Новые образовательные программы-туризм, сел.хоз., для развития текущих-квалификация кадров, доставка ресурсов. **Типы образовательных программ:** Краткосрочные и долгосрочные программы. **Масштаб деятельности:** Секторы- туризм, сел.хоз., IT,пер. Сх. Прод., пищевая промышл. Краткосрочные програмы-280 студентов, долгосрочные программы-80 студентов **Целевой уровень подготовки в учреждении:** минимальный уровень квалификации, необходимый для того чтобы получить работу; уровень квалификации, удовлетворяющий средним требованиям рынка труда и работодателей; или уровень квалификации в соответствии с международными стандартами **Доля доходов от коммерческой деятельности:** Бюджет. И комерч. **Ключевое отличие вашего учреждения от других:** Центр развития и совершенствования туризма и пер. Сх прод.	Кадры, оборудование, мониторинг
АВАНГАРД	**Специализация:** горнодобывающее, сельское хозяйство, туризм, культура **Типы образовательных программ:** краткосрочные или долгосрочные **Масштаб деятельности:** 4 сектора, 1000 студентов **Целевой уровень подготовки в учреждении:** удовлетворяющий средним требованиям рынка труда и работодателей и уровень квалификации в соответствии с международными стандартами **Доля доходов от коммерческой деятельности:** 50% **В одном предложении зафиксируйте ключевое отличие вашего** **Ключевое отличие вашего учреждения от других:** «Национальное достояние» в промышленности и культуре	Повышение квалификации кадров, Техническое и программное оснащение соответствующих специальностей данных секторов, Обмен опыта с международными ведущими учебными заведениями и работодателями.



LAV	**Специализация:** Туризм, сел.хоз. **Типы образовательных программ:** Туризм -краткосроч, сел.хоз. долгоср. **Масштаб деятельности:** 2сект., долгоср 1000ст., краткосроч.500 **Целевой уровень подготовки в учреждении:** уровень квалификации в соответствии с международными стандартами. **Доля доходов от коммерческой деятельности:** 60% **Ключевое отличие вашего учреждения от других:** Центром превосходства переработки сельскохоз. продуктов и организации туризма	Кадры, оборудование, реклама, методика, рынок сбыта
ԱՐԿԵՍՏԻՐ	**Специализация:** культура, образование, туризм, медицина **Типы образовательных программ:** долгосрочные, краткосрочные **Масштаб деятельности:** долгосрочные и краткосрочные -1200-, **Целевой уровень подготовки в учреждении:** уровень квалификации, удовлетворяющий средним требованиям рынка труда **Доля доходов от коммерческой деятельности:** 40% **Ключевое отличие вашего учреждения от других:** «центром превосходства» в шоу бизнесе	Расширение МТБ, повышение квалификации, новые программы

Принятые решения и полученные результаты

Общее количество студентов в учреждениях на 2016 | Набор в учреждениях за 2016

* Ярким цветом обозначены сведения для долгосрочных программ, прозрачным цветом обозначены сведения для краткосрочных программ.

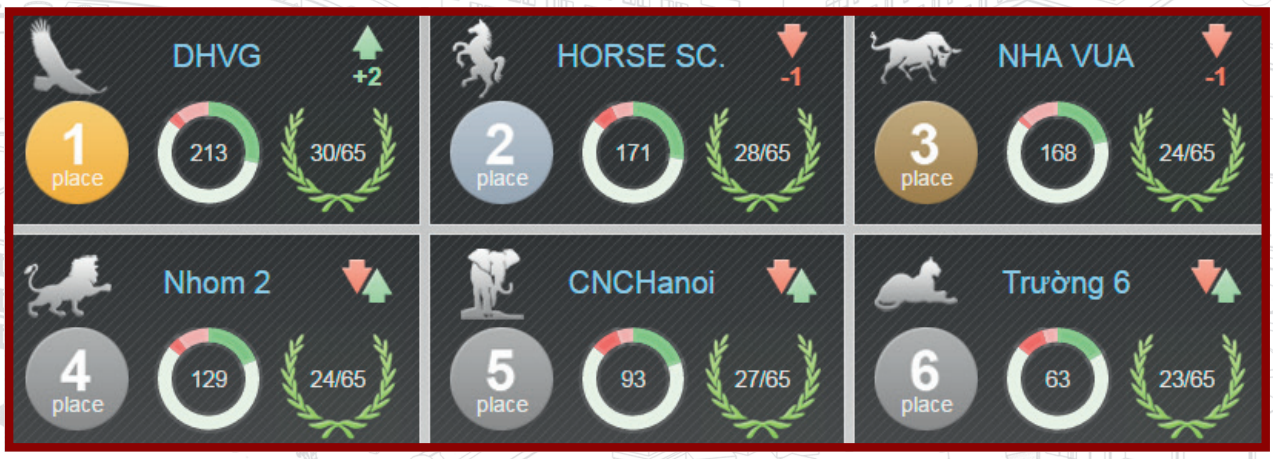
Analytical report (fragment)

Game Component

The training is carried out in a game format, which ensures competition between the teams, enhances the participants' excitement and increases their motivation.

The game component is realised through the following elements of the training course:

- **Competition and excitement.** The teams compete against each other for game resources (grants, participation in programmes) and for a share in the educational market (attracting potential students).
- **Unpredictability/uncertainty.** The effects of decisions taken by the teams are not always predictable and readily apparent to them. The same solutions may lead to different consequences, depending on the current game situation. The educational services market is constantly changing.
- **Possibility of using different strategies.** There is no universal way to win. The success of a strategy depends on the actions of the other teams and the evolving game situation.
- **Game storyline.** The participants get used to the role of the manager at a secondary technical and vocational education institution. During the game, events occur which are built into the scenario and which affect the game situation and the balance.
- **Rating.** The teams are awarded prizes for managerial achievements provided that they have met certain requirements within the simulation model. The distribution of teams in the game rating depends on the number of their achievements. Various achievements have different weights, which influence the formation of the game rating.



Team rating (fragment of the computer simulation interface)

Organisation, Administration and Technical Support

As part of the training, the facilitators perform the following tasks:

- create a game in the simulator before the start of the training, assign user IDs and passwords to the teams;
- prepare the infrastructure and facilities for the training (arrange the furniture, set up the equipment);
- show an introductory presentation to the participants, which includes information about what they have to do during the training, and how the work will be organised;
- give advice to the teams regarding interface elements and the internal logic of the simulator when they are making management decisions;
- answer questions asked by the teams, but not make decisions for the participants;
- organise the work of the teams, give advice concerning the allocation of responsibility within the teams, remind them that they have to make decisions before the end of the round, and draw the participants' attention to critical issues (for example, the absence of applicants in the institution, a large amount of debt);
- moderate the teams' reports, ask questions to speakers, make notes of the most important points of the reports;
- perform calculations of the simulator data after each round, block/unblock the simulator interface at the end and at the beginning of each round;
- prepare analytical reports, analyse the strategies of the teams, and make an analysis of the strategies at the end of the training course;
- show the teams' rankings and achievements, comment on the results, and point out the most interesting achievements of the teams;
- organise an analysis of the training results and reflection on the results by the teams; and
- ensure compliance with the rules of the training course.

Potential facilitators of the training must, first of all, be able to implement active forms of learning (gaming technology and skills of moderating group communication). The actions of the facilitator must be thought over and be in line with certain principles, attitudes and goals.

The facilitator must be able to:

- introduce the participants to the role of an official responsible for the development of a virtual institution;
- create a working and, at the same time, relaxed atmosphere;
- establish and encourage interaction within the team;
- encourage the participants to evaluate the actions taken;
- engage the participants in a discussion;
- ask guiding questions to the participants, causing them to think for themselves, and not give them direct answers.

Example of Round 1 of the Game

1 Вводная презентация

The facilitators make an introductory presentation, explain to the participants what they will be doing during the training, and how the work will be organised.

10 MIN

2 Профайл учреждения

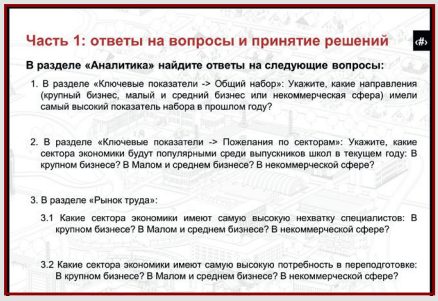
At the beginning of the round, the participants are introduced to the profile of the institutions, presented in the workbooks.

10 MIN

3 Выполнение заданий

The teams proceed to do the first part of the tasks set for this game round.
The teams answer guiding questions.

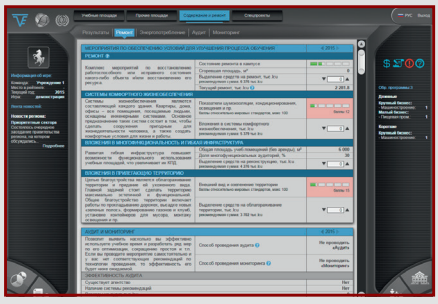
30 MIN



4 Принятие решений

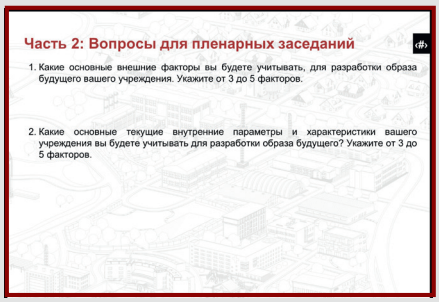
Working with the simulator, the teams make managerial decisions. The facilitators answer questions asked by the teams and advise participants, if necessary.

60 MIN



5 Подготовка докладов

The teams prepare presentations for their reports at the plenary session.
Presentations and reports are based on the answers to the questions from the second part of the tasks for the current round. 15 MIN



6 Выступление команд

The teams present their reports, which describe the intended image of their educational institutions at the end of the course, and its development priorities.

30 MIN

7 Игровой рейтинг

The facilitators show the game rating, analyse the rating and the results achieved.

20 MIN

8 Аналитический отчет

The teams are introduced to the analytical report on the results of the round.

10 MIN

Documentation Required to Conduct the Training

Organising the training requires a set of documents/information resources. Some of them are used throughout the training course, while the others provide support for one of the technology elements.

- **Script for conducting the training**. It is used by the facilitators in the preparation and conducting of the training. The script contains a step-by-step description of all the stages of the activity, as well as the actions of the facilitators and the participants in each of the rounds.

- **Overview presentation**. It is shown at the beginning of the training to help the participants to get a good idea of its structure. The overview presentation allows the participants to understand the structure of the training and the simulation model in particular, to find out what they will be doing, how their work will be organised, and what challenges they will encounter.

- **Tasks for the teams**. The tasks contain sets of questions to help the teams in mastering the game model and the simulator interface and to guide the team in preparing presentations for plenary discussions.

- **Workbook**. It contains introductory information about the initial state of the virtual institution, a description of the various aspects of managing the institution, instructions for obtaining analytical information from the simulator, and the questions included in the tasks. This information helps the participants to get involved in the work and contributes to the understanding of what is happening.

- **Analytical reports on the results of the round**. These reports are issued to the teams in a hard copy after each round. Each report contains information on the results of all the teams in the last round, and a structured set of the main points made by the teams during the last plenary discussion. The reports help the teams to compare the efficiency of their actions and of the implemented strategies with those of the other teams, and see the problem areas in their virtual institutions.

- **General presentations to analyse the game strategies of the teams**. These presentations make it possible to analyse the teams' strategies for the debriefing at the end of the training course. They show which of the possible strategies each of the teams followed throughout the course (taking into account its achievements).

- **Help system**. This is integrated in the simulator. The help system is a pop-up description in the windows of the simulator interface. It helps the participants to understand the simulation model and its interface. The help system appears by default in each window of the interface when first entering it.

- **Instructions for participants on the use of the simulator**. This is a comprehensive guide for the training participants with a detailed description of all the specific features of work with the simulator.

Results

The Managing a Technical and Vocational Education and Training Institution training course allows participants to move to a qualitatively higher level of management. Having improved their personal efficiency as managers of TVET institutions, the participants of the training will learn:

- to make management decisions based on a **systemic analysis of the situation**;
- to see and establish **links between management components**;
- to better organise **work in a team**, to build intra-team communication, and to assign responsibilities;
- **to involve colleagues and subordinates in the work** to achieve the objectives of the institution;
- to find and effectively use **non-budgetary sources** of funding;
- **to evaluate**, based on arguments, **the feasibility and results of reforms** in the institution;
- to work out a **development strategy of the institution**, to set goals and find ways to achieve them, to work under stress caused by lack of time;
- **to make decisions in a changing environment** more efficiently;
- to organise work in accordance with goals selected;
- to have a better idea of **the opportunities of the external environment** (trends, approaches);
- to analyse the results of programmes in terms of the development strategy of the institution; and
- to use in their work a whole range of **new possibilities and management tools** in the field of TVET;

СКОЛКОВО
Московская школа управления

СЕРТИФИКАТ

Господин(жа) _____

успешно прошел(ла) тренинг по управлению колледжем на базе комплексного компьютерного симулятора

«MANAGING TVET INSTITUTION»,

организованный совместно с Международной организацией труда и Министерством образования и науки Республики Армения

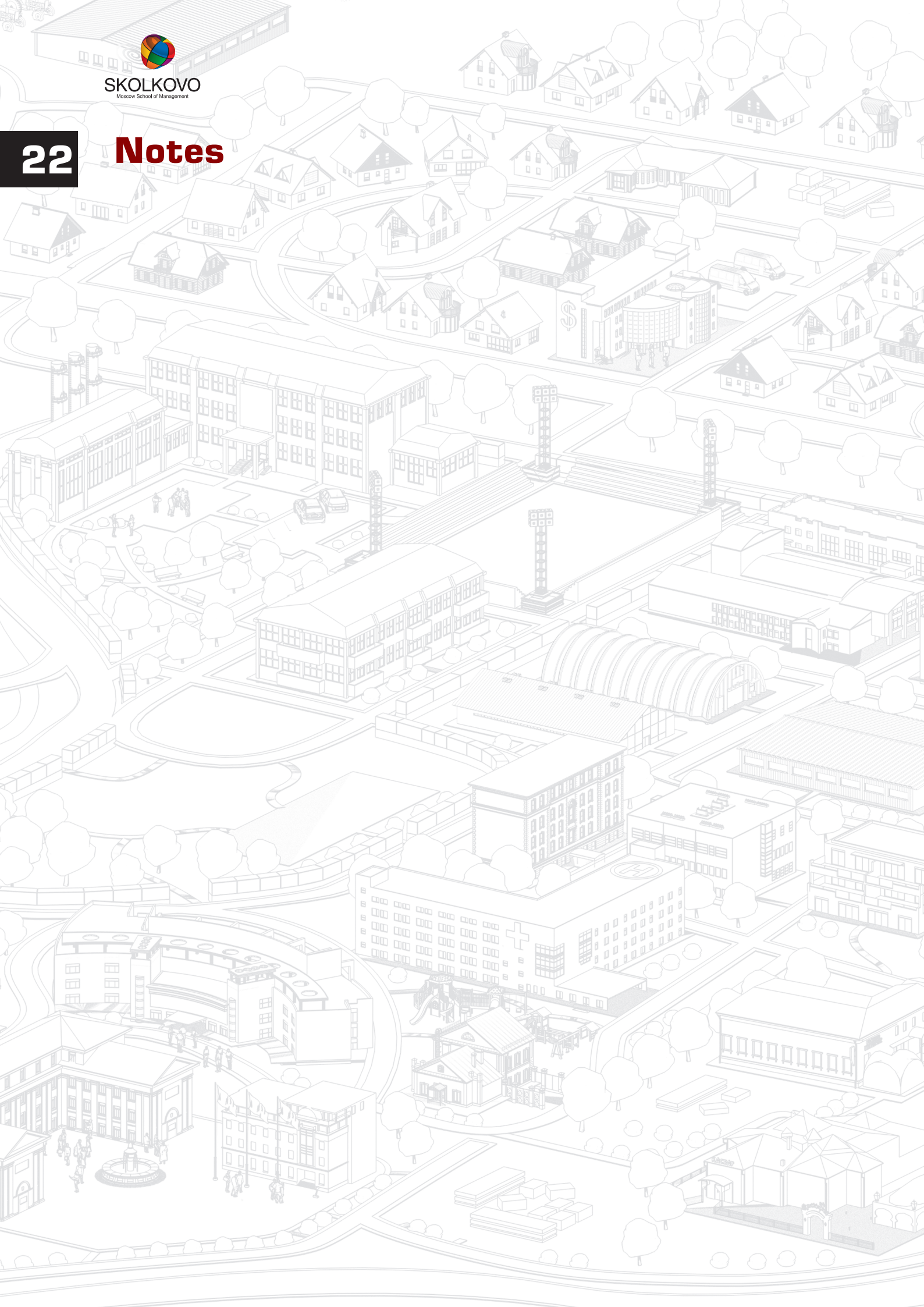
21-22 апреля 2016 года

САХАРОВА В.В.
РУКОВОДИТЕЛЬ МЕЖДУНАРОДНОЙ ПРОГРАММЫ СОТРУДНИЧЕСТВА РОССИЙСКОЙ ФЕДЕРАЦИИ И МОТ ПО УКРЕПЛЕНИЮ СИСТЕМ ТУЕТ И РЫНКОВ ТРУДА В СТРАНАХ СНГ, АЗИИ И БЛИЖНЕГО ВОСТОКА

SKOLKOVO
Moscow School of Management

22

Notes



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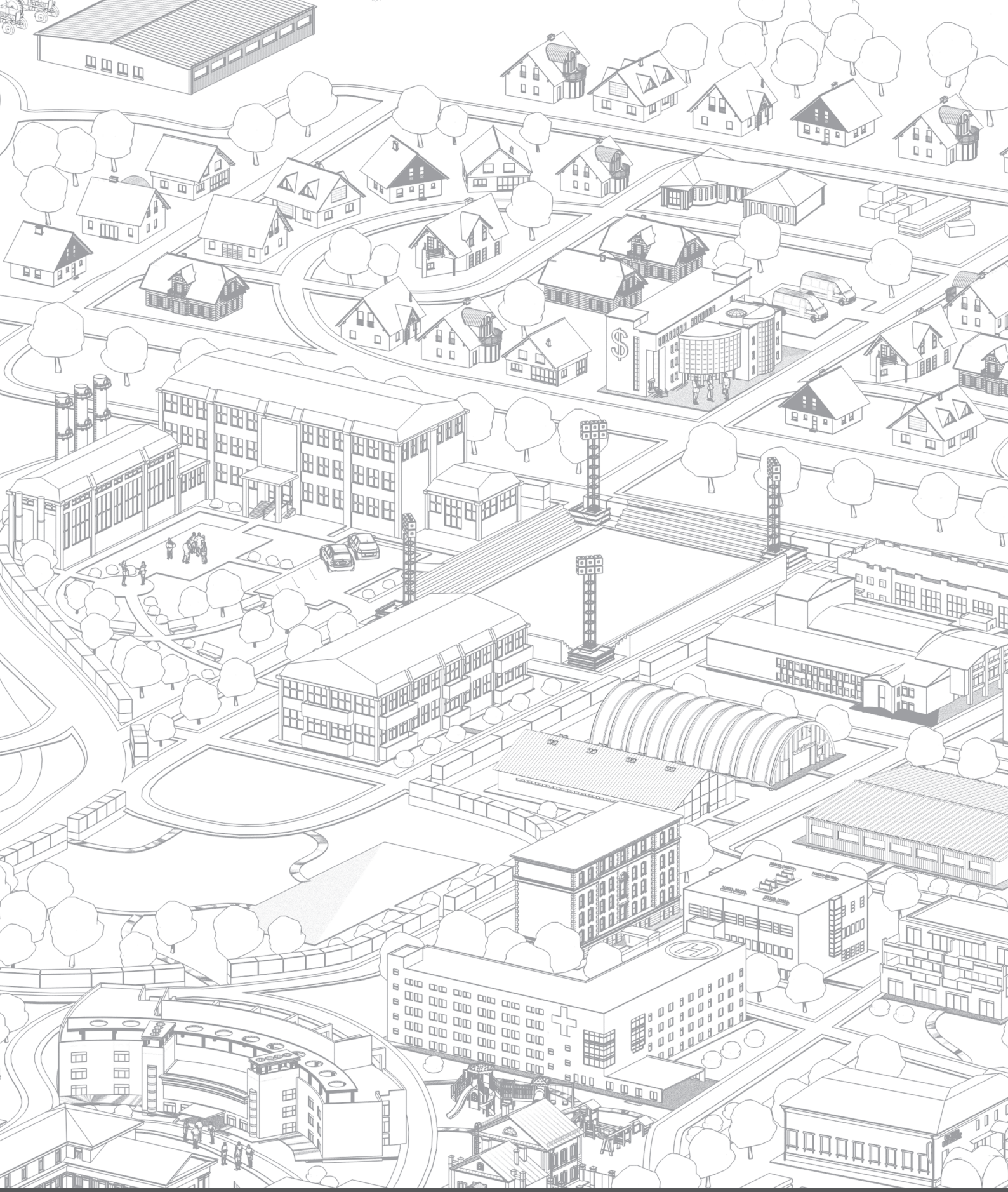

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