Special aspects of using TRIZ for solving organizational and administrative problems: inventive situation schematization and contradiction management

A thesis for a Master's degree in TRIZ

Anton Kozhemyako, 2019

Organizational and administrtive problems

Organizational and administrative problems

Organising

Management

Administration

Managing

Organizational and administrative problems

Examples of organizational and institutional problems

Examples of problems set by task-setter:

1. To reduce IT-product design time;
2. To increase DMI cards sales to individuals by 20%;
3. To improve accuracy of forecasting orders for chilled chicken meat in 3 days prospective (at the moment imprecision reaches 5%, which leads to losses of 50 mln rbls per percentage point a year);
4. To decrease the owner's role in solving routine organizational tasks;
5. The company is 15 years old. Its core team has revised their values. Current organizational and management system is stagnating. The task is to find new ways to manage the process focusing on flexible management forms (Agile, spiral motion towards turquoise organization);
6. To provide 30% increase in customers for domestic appliances internet store without boosting promotion budget.

Which TRIZ tool is to be used to solve the task?

Choosing tools

TRIZ:

1. Stakeholders' analysis and MPV-analysis.
2. Functional analysis.
3. System operator.
4. Flow analysis…

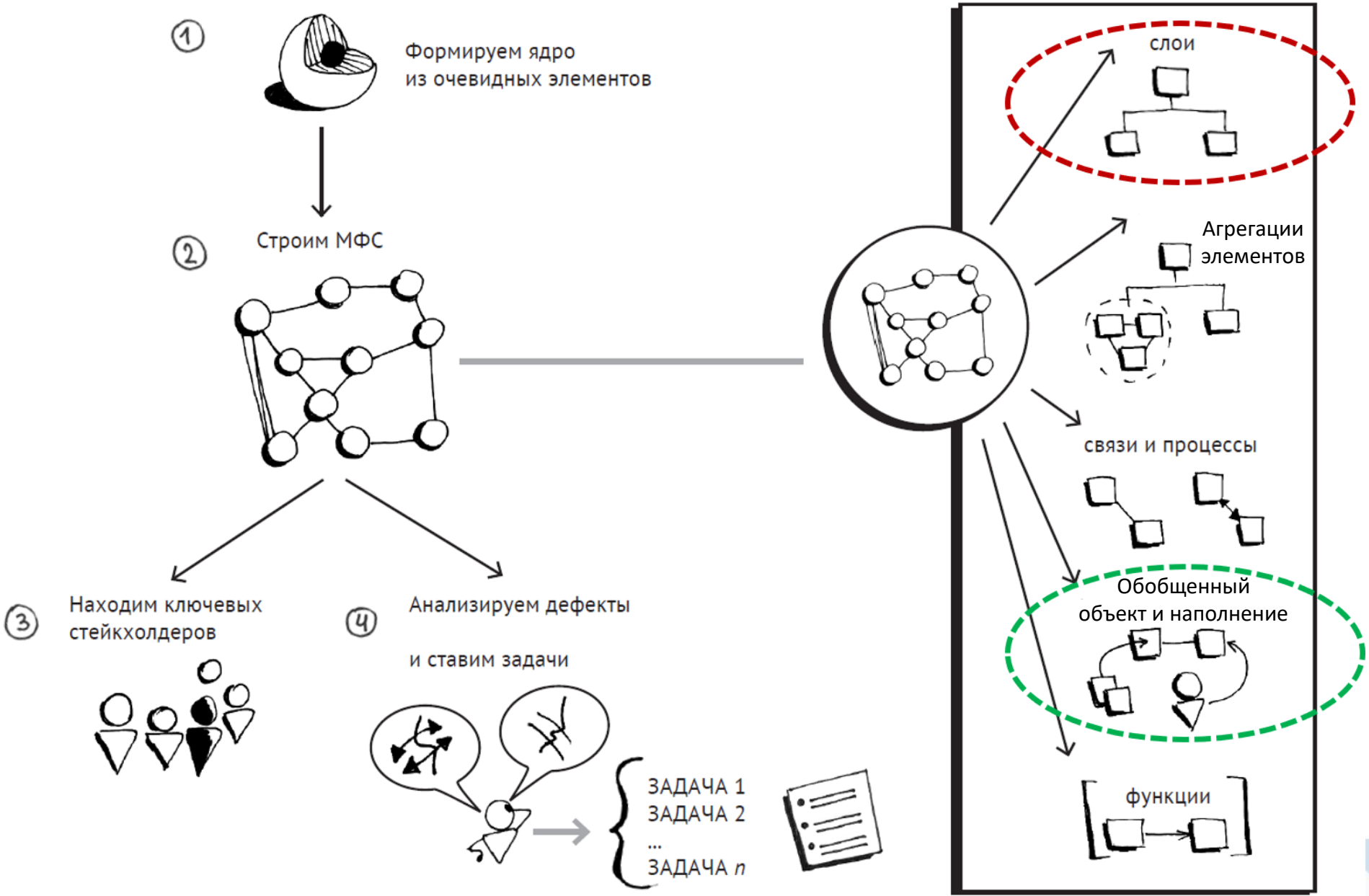
Buiseness:

1. Business processes description: notations IDEF0, BPMN…
2. SMART.
3. Facilitation techniques, scribing.
4. IM (Impact Map), CJM (Customer Journey Map), USM (User Story Map)…

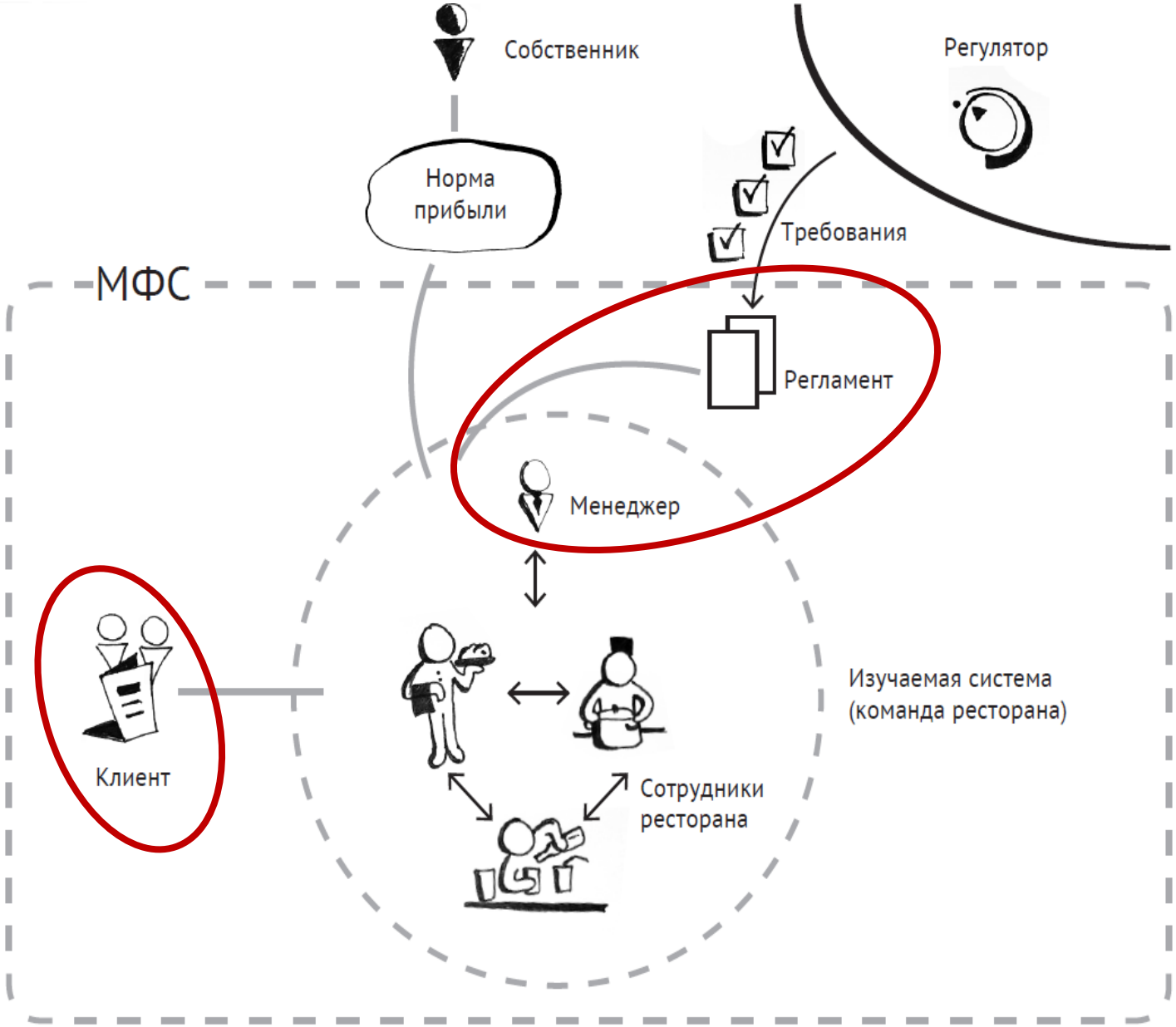
Which instrument is to be used for initial analysis of the problem to be solved?

inventive situation schematization

Schematization categories



Example: restaurant problem



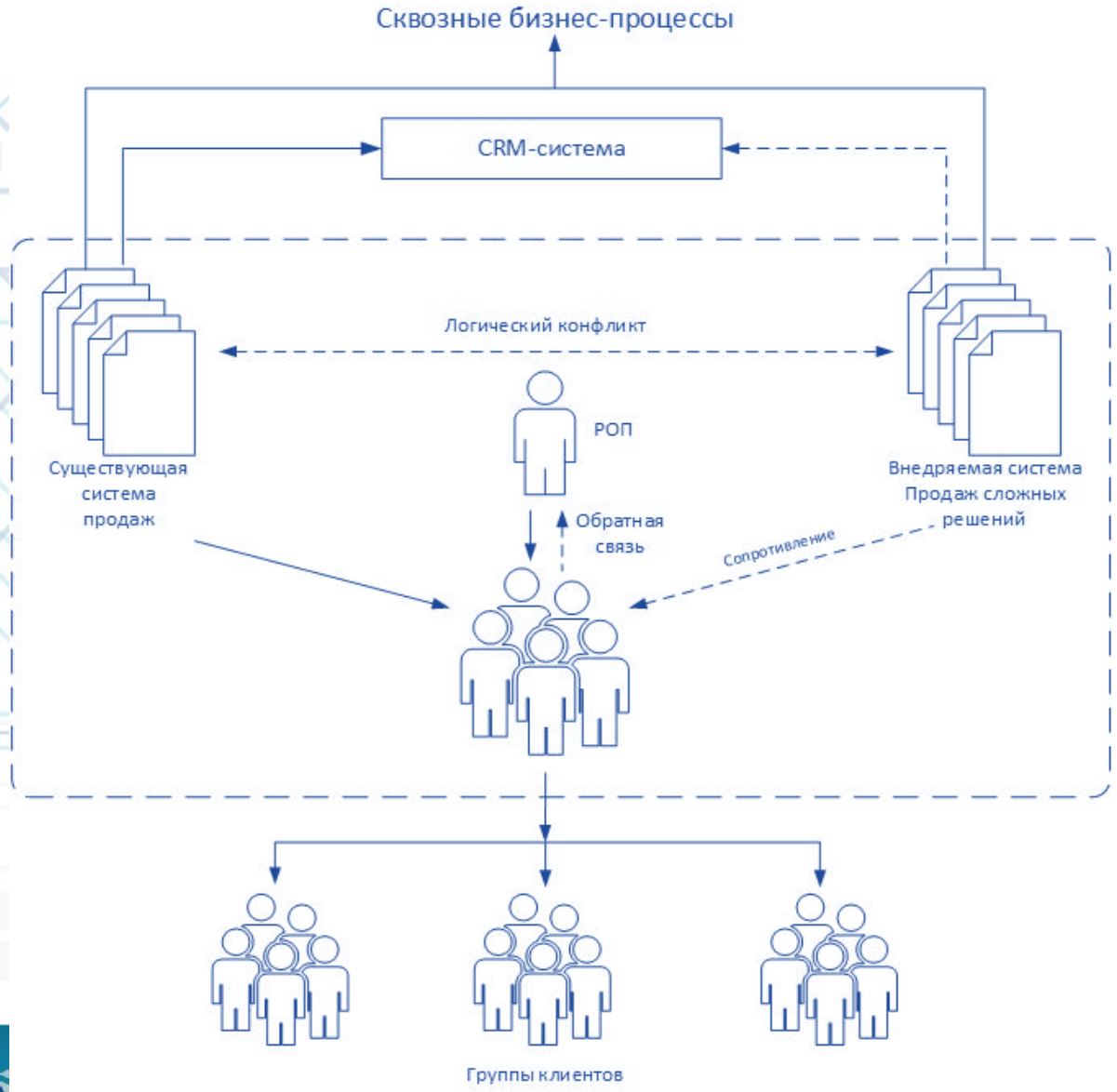
The restaurant has developed foodstuff and ready meal storage regulations, which correspond to monitoring authorities' requirements and, in some cases, are even tougher.

The problem: if regulations are followed, the profit margin drops considerably lower the target level, set by the business owner. Therefore misguided practice of using fake expiry date tickets was established in the company.

Requirements: to provide profit level, indicated by the owner

Limitations: тthe regulations are to be fulfilled, cheating with expiry date is prohibited.

Schematization: Sales department problem



Administrative contradiction:

- Given is the system of a sales department of a company, producing tooling of heat-resistant steel. The system consists of: the manager, the employees, existing sales practice.
- **The problem:** the manager of sales department (MSD) is implementing a new sales system, that provides better client studies and, subsequently, allows to increase average contract amount and conversion, but the managers are resisting and do not want to leave tried and tested way.
- **Requirements:** to make the managers use only new system's tools in their work.
- **Limitations:** implementation time – not more than 6 months, staff increase – not more than 1 person till the end of the year.

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1	**MFS frame (transition to supersystem)**	1.1.	SS: CRM-software. The conflict occurred due to the fact, that current CRM software wasn't adjusted to meet the requirements of the new sales system which causes considerable inconveniences → What can be done to make the CRM-software meet the requirements of the new sales system, thus supporting it.
		1.2	SS: cross-cutting business processes. New sales system modifies cross-cutting business-processes, mainly -- communication with design and production departments → First we have to describe BPs, locate their defects and adjust cross-cutting BPs so as they cause minimal time loss for their participants.
		1.3.	SS: clients. New sales system increases the time needed for a contact with a client manyfold. → What can be done to provide better client studies without increasing managers' time input.
2	**Layers**	2.1	The sales system being implemented modifies managers' work, applying additional requirements → What can be done to fulfill the sales system requirements with minimal managers' efforts.
		2.2	Managers note that for some clients new system's requirements are abundant, which doesn't increase but reduces efficiency (from this point of view managers "have control" over clients' reaction, which explains the layers' structure on the scheme) → It's due to differentiate clients and implement the new system only in those client groups, where its implementation can lead to considerable economical effect.

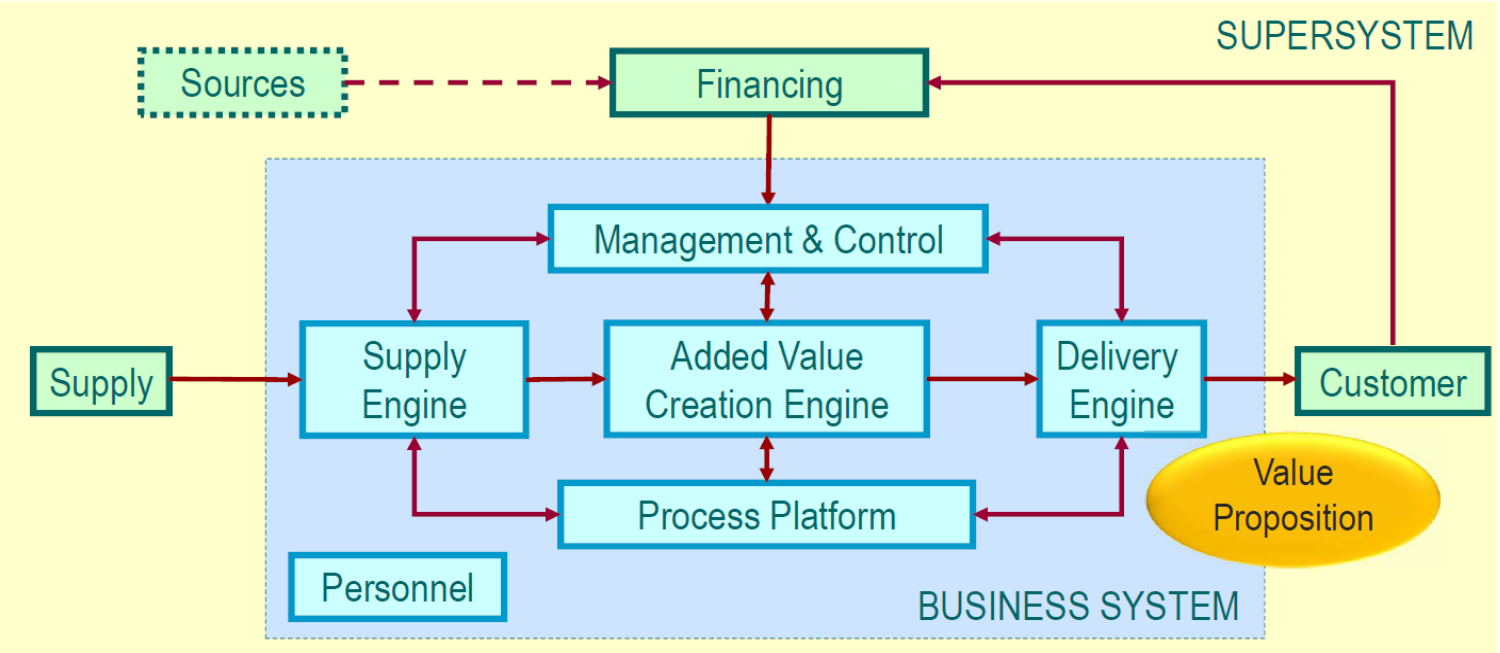
3	**Connections**		**Partially analyzed in pp. 1 and 2. In addition:**
		3.1	Logical conflict between the two systems, e.g., approach to identification of client's needs is completely changed, transaction stages are drastically different → We have to compare the requirements of the current and the new systems, locate zones of similarity and drastic difference, take the drastic difference zones into elementary pieces and set tasks in changing managers' work only in these specified zones, thus facilitating implementation.
		3.2	Flaws in connection MSD – managers → We have to specify metrics and reference points in the new sales system, where feedback will be generated. Then obtaining data from the reference points should be simplified (automatic measurement is much preferred).
		3.3	Connection CRM software – MSD should be established → After solving the problem 3.2, CRM software should be adjusted to correspond to the decisions made; Besides, similar adjustments should be made to meetings' agenda, in order to reinforce communication on reference points and to weaken one on irrelevant issues.
4	**Processes and functions**	4.1	This problem is a copy of the problem 1.2: to perform in-depth analysis of the BPs including Sales and design department, and also including Sales and Production (Process diagrams should be arranged in BPMN notation beforehand). After bottlenecks are located, tasks should be set up to take them away.
		4.2.	After problem 1.1 is solved, a new task of simplifying any data input into CRM system by the managers should be set.

5	**Groups**	**5.1**	**Negative impact on the group of managers – Influence of new technology acceptance model by G. Moore. → How can innovators and early adopters be used to support new sales system implementation? What are the ways to locate slouches, how can we neutralize them?**
		5.2.	Groups of clients. Adjustment of the problem 2.2: To divide clients into groups A, B and C. **To specify the clients' categories for whom the new system is abundant. New problem:** to set a task on synchronization managers' work in two sales systems in case 2.2 hypothesis is confirmed and it is reasonable to preserve current system for some clients.
6	Place and material	6.1.	Correspondence between managers' skills and new system's requirements. To teach 'advanced average performers' how to use the new system after solving problem 1-5(?), to estimate if they are capable of becoming "stars". If not – to perform comparative study of both groups' work and to provide additional training for 'advanced average performers' in accordance with the designed efficiency model.

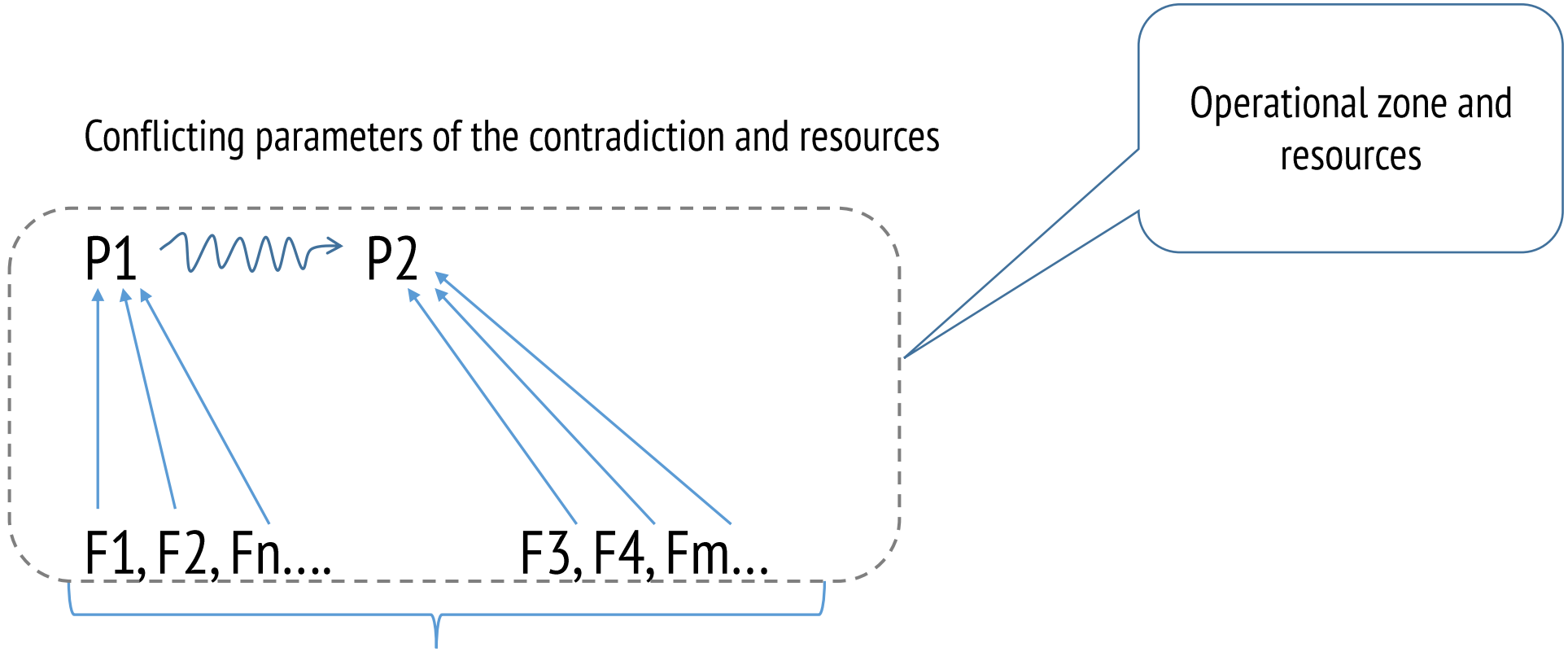
Operational zone and resources in organizational and administrative problems: parametric approach

Choosing an operational zone in an organizational and administrative problem can be a great challenge

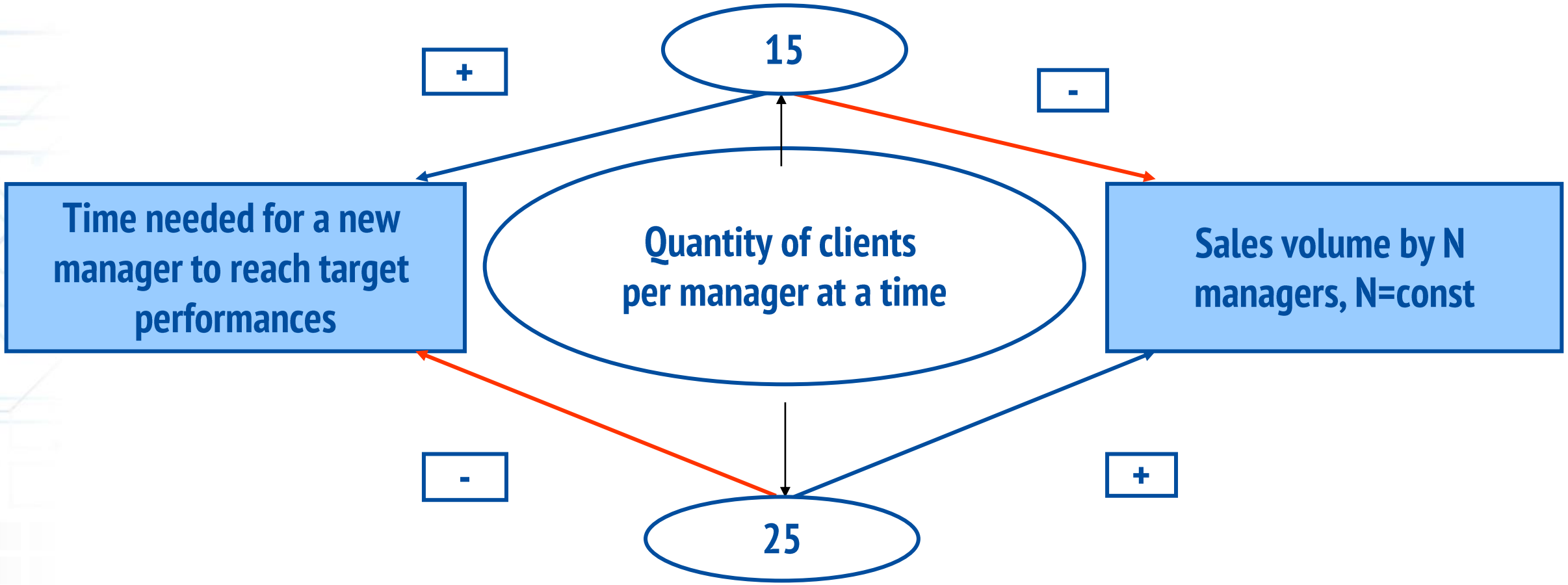
Business systems create a lot of connections, therefore it's pretty difficult to specify operational zones there.



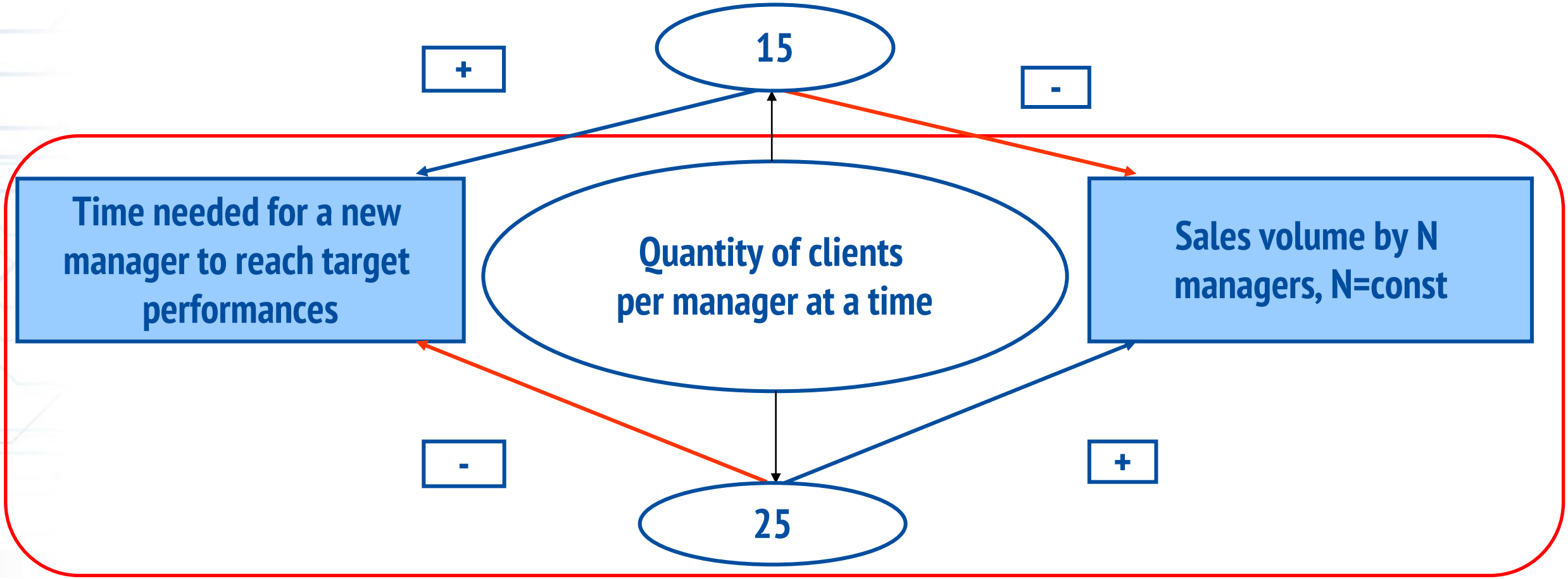
Factor approach to defining resources



Choosing an operational zone in an organizational and administrative problem



Task



Choosing one of two TCs as operational contradiction

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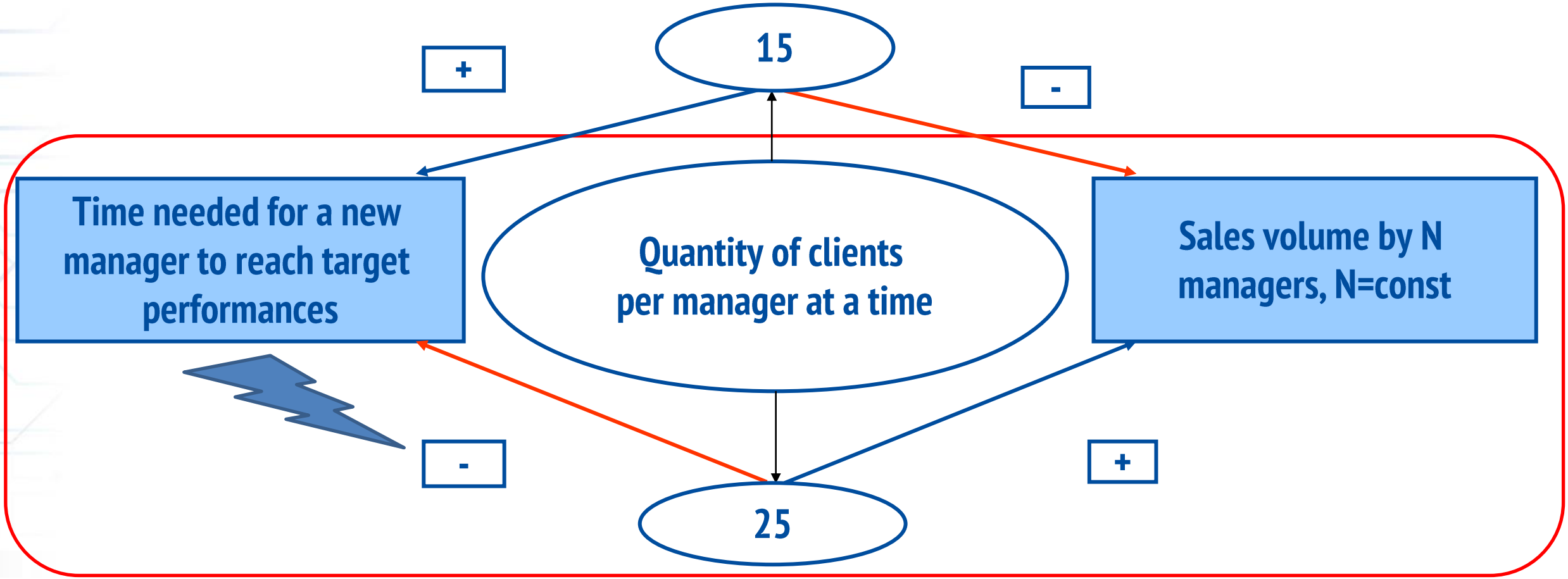
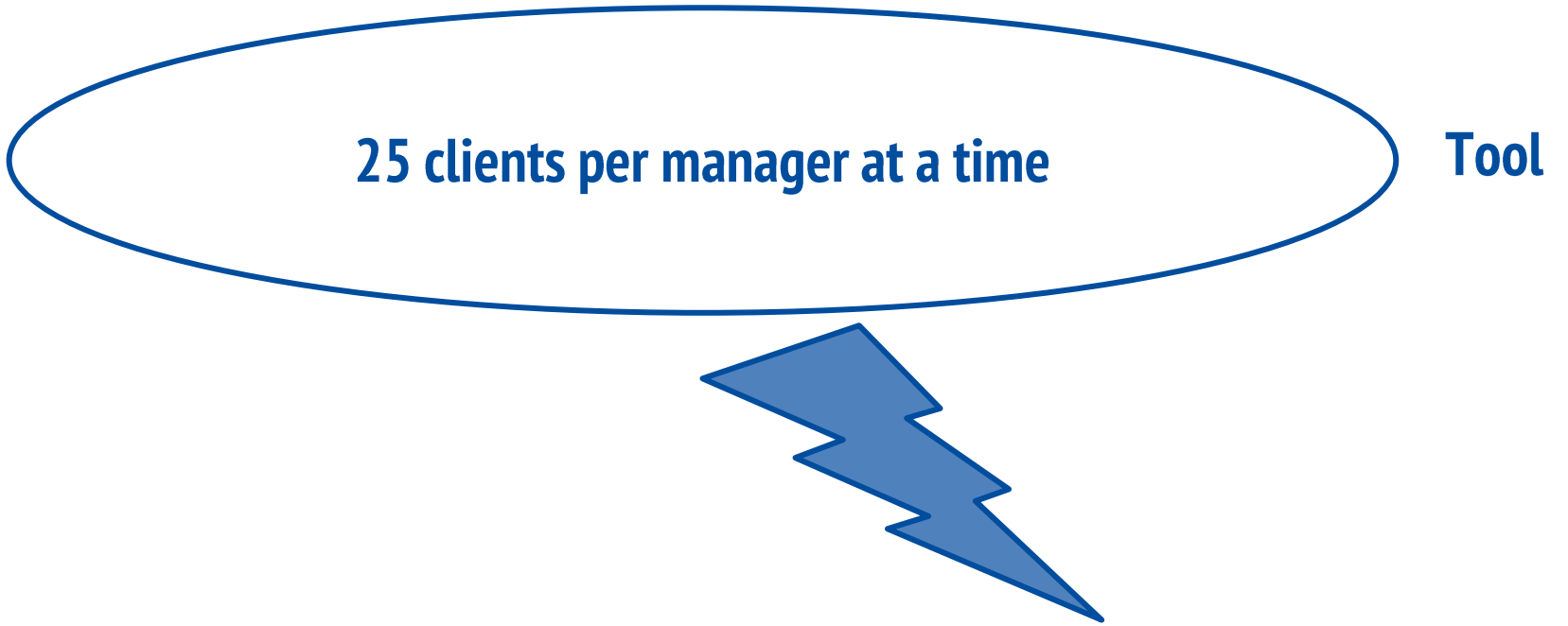


Choosing operational zone

Conflict zone (OZ)



Resources

Operational zone element	Element's role	Resources as a sub-system of each element
25 clients per manager at a time	Tool	Decision algorithm in category A transaction Decision algorithm in category B transaction Transaction stages (sales funnel) Sales channels Associated work during a transaction Manager's mistakes during setting up a clients' database
Time needed to reach target performances	Object	Number of leads (responses to marketing activity) Leads' quality Conversion Average number of deals a year Employee's skills

Resources processing example

1. IER rule: <X-element> by itself makes the manager to reach target performances in 3 months prospective, while the manager is dealing with 25 clients at a time.
2. Manager's mistakes during setting up a clients' database make the manager to reach target performances in 3 months prospective, while the manager is dealing with 25 clients at a time.
3. Since the desired result wasn't achieved through IER rule directly, we switch to extracting FC from the chosen resource: "mistakes in database setting up should lead to manager's sales skills improvement and allow him to reach target performances within 3 months" and "mistakes in database setting up do not lead to manager's sales skills improvement since he doesn't have necessary skills in analyzing these mistakes".

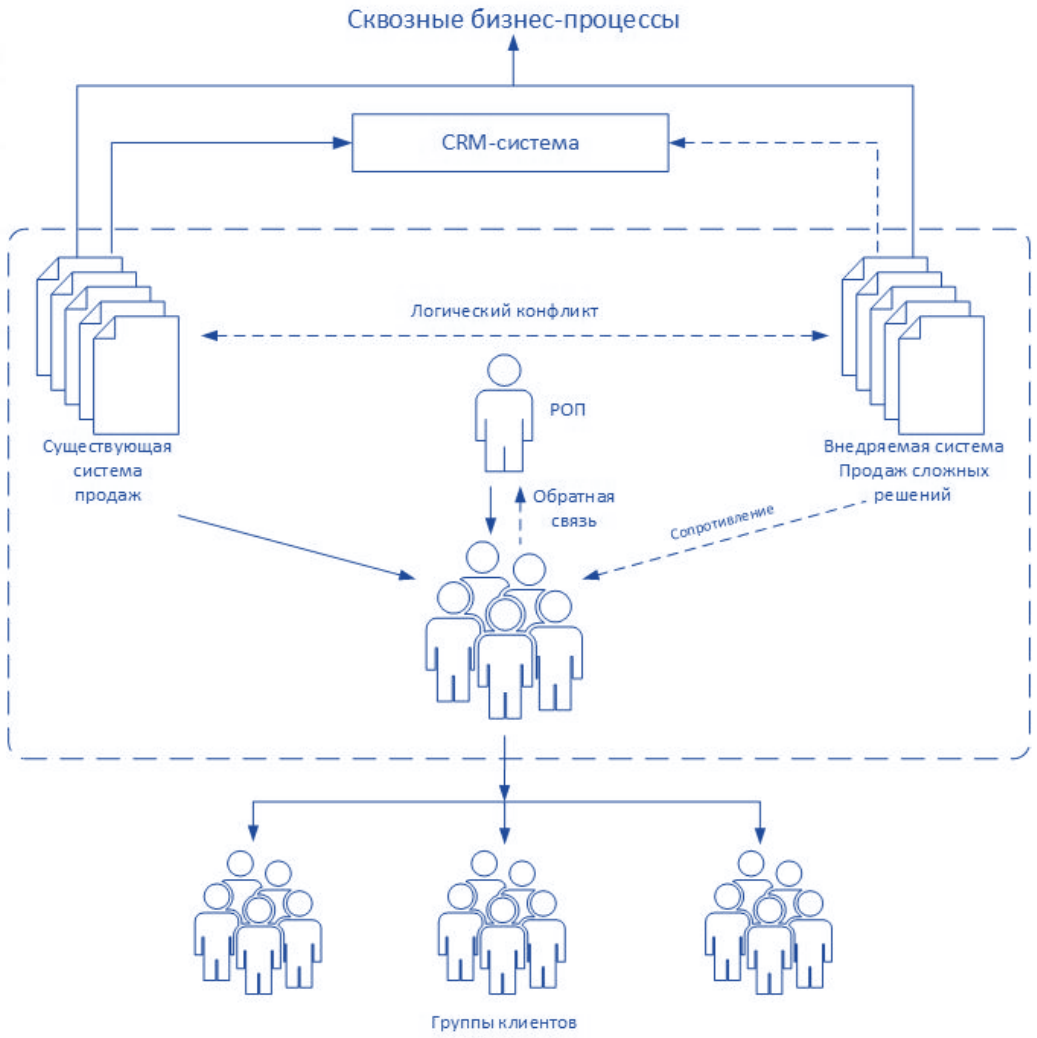
Solution

Since the company who was the task-setter for this problem has a system for commercial personnel onboarding, it was pretty easy for existing mentor to control also the process of database setting by newcomers. This process was analyzed twice a week at the beginning, then once a week and finally once every two weeks. Thus mistakes were transformed into a source for further work improvement. The analysis is performed in accordance with efficiency models designed for mentors.

CASES

Cross-cutting case: Sales department problem

The task is to boost sales department efficiency



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1.1	**What can be done to make CRM system be corresponding to requirements of the new system and supporting it?**	**1.1.1**	**To perform ABC analysis and to create client's portraits in every channel's categories.**	
		1.1.2.	To organize multi-funnel in CRM (according to processes and results) in terms of money and quantity.	FR (for record):manager's mistakes while choosing a funnel
		1.1.3	To introduce the possibility to assign several contractors for the same transaction and to indicate their status and role in client's card.	
		1.1.4	To introduce categorization of transactions and contractors.	
		1.1.5	To configure procedural funnel and results-based funnel reports in accordance with work specification.	
1.2	To design cross-cutting processes as to meet the requirements of the new sales system.	1.2.1	To describe current business processes between the departments mentioned in BPMN notation, and find the points that do not correspond to the new sales system requirements (after solving 1.2.3 problem)*	
1.3	What can be done to provide better client studies without increasing managers' time input.	1.3.1	To introduce basic decision circuits for priority sales channels, indicating input points and proceeding tips for A and B category clients.	FR: If there are 5 channels, so at least 10 circuits are to be followed, which are to be chosen from in a right way.
		1.3.2	To introduce advantage matrices per channel	TC (ITB): A lot of demand hypotheses – better chance to start UTP, but they are difficult to keep track of, since one has to reproduce them during conversation
		1.3.3	To start a bonus program for clients	TC (ITB): a lot of bonuses – better chance to meet requirements, but it is difficult to choose.
		1.3.4	To introduce a scope of typical questions for every stage of the funnel	TC (ITB): a lot of questions form a better chance to start UTP, but the client can be fatigued

2.1	What can be done to fulfill the sales system requirements with minimal managers' efforts.	**2.1.1**	**To use prompts in CRM system**	
		2.1.2	To make CRM system gathering certain indicators' values by itself from clients' portraits.	
		2.1.3	To describe manager's business-processes for every stage of procedural and results-based funnel, denoting the points of maximal time losses and setting new tasks to eliminate those points.	
2.2	To differentiate clients and implement the new system only in those client groups, where the new system is expected to increase conversion and average amount per transaction.	2.2.1	To preserve the existing system for category C clients. To implement the new system only for category A and B clients.	TC: there is a contradiction in choosing sales department organization: should all managers use both systems or should we differentiate the employees.
3.1	To compare the requirements of the existing and the new systems, to locate zones of similarity and drastic difference, to take the drastic difference zones into elementary pieces, thus facilitating implementation.		Partially the problem is solved in pp 1.3.2 – 1.3.4	
		3.1.1	A change in procedure while choosing of a variant: a list of typical choosing criteria should be set per channel depending on decision making unit (the schemes in p. 1.3.1 should be modified).	FR: Managers forget to perform correct choosing of a variant and let things slide.
		3.1.2	A change in procedure: a new stage of economic justification was introduced. Examples (cases) of ROI calculations should be provided, which managers can use while preparing sales quotations.	
		3.1.3	The stage of 'rejection handling' was replaced with 'Solution of clients' doubts', which causes problems. So managers should be taught what doubts' background is, how doubts are shown and what can be done to deal with doubts.	FR: Managers often miss the doubts, originating from decision making units even after the training.
3.2	To specify metrics and reference points in the new sales system, where feedback will be generated from managers to head officer . To simplify obtaining data from the reference points.	3.2.1	To specify quantitative indicators within procedural and results-based funnels.	
		3.2.2	To specify qualitative indicators within results-based funnel.	FR: Qualitative indicators in sales funnel are difficult to monitor.
		3.2.3.	To specify variants of how day-to-day data input into CRM-system by managers can be controlled. (Electronic commerce tools are not used in the company)	
		3.2.4	To provide generating leads from managers' E-mail and company's Internet site. To arrange automatic lead record.	FR: There is a risk that the same client will be recorded with different

3.3	**To make corresponding adjustments to meetings' agenda to reinforce communication on reference points and to weaken one on irrelevant issues.**	**3.3.1**	**To design a new report in CRM-system: "Results-based funnel progress per week per manager".**	
4.1	To perform in-depth analysis of the BPs including Sales and design department, and also including Sales and Production.		Is a part of problem 1.2.1.	
4.2	To set a task of simplifying necessary data input into CRM system by introducing rules and templates.		Tasks 1.1.1 – 1.1.5 and some others	
		4.2.1	After tasks 1.1.1; 1.3.1-1.3.4 are fulfilled, the evolving documents should be integrated into CRM-system.	
5.1	How can innovators and early adopters be used to support new sales system implementation? What are the ways to locate slouches, how can we neutralize them?	5.1.1	A report on CRM options' usage is to be designed in CRM system (which entities are used most).	
		5.1.2	A correlation report: Entities used – Conversion – Average transaction amount – Gross margin per month is to be designed (Including data obtained during meetings).	

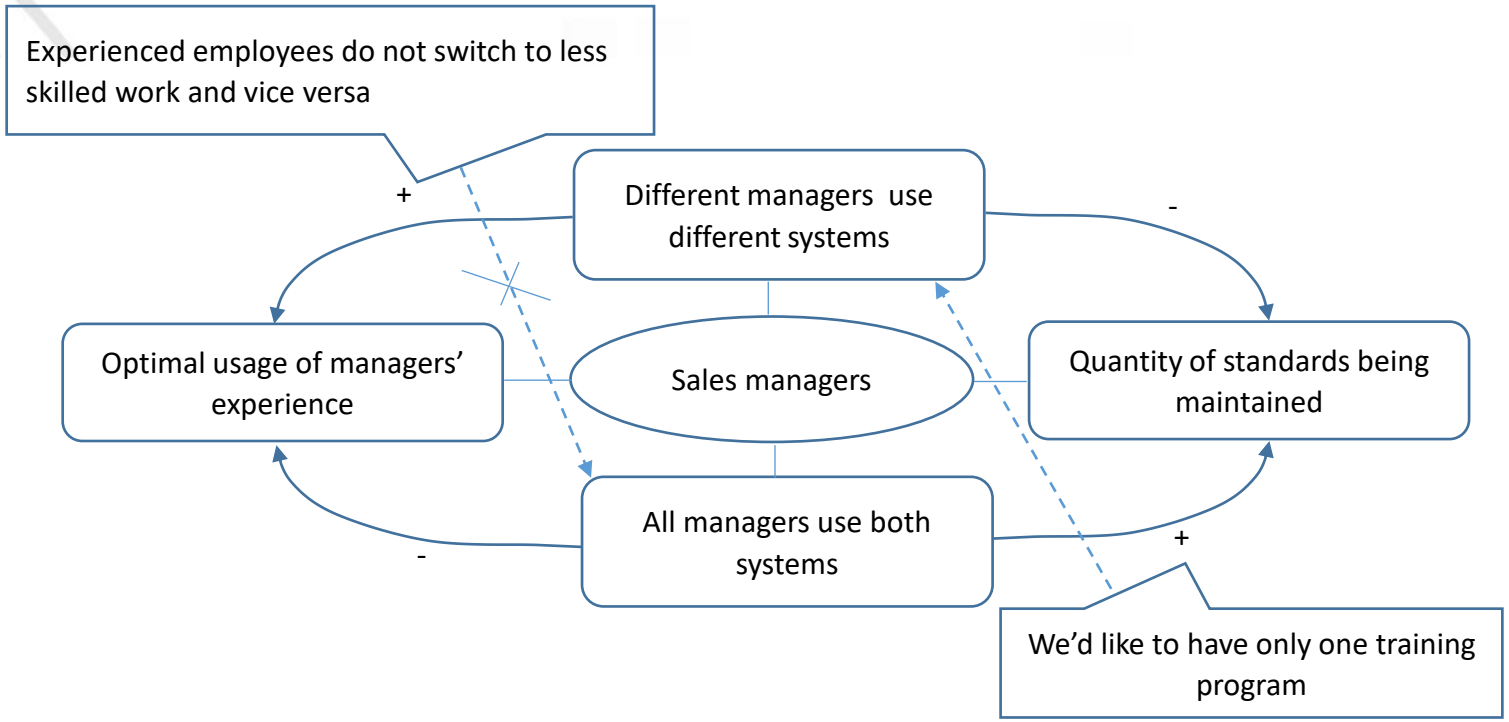
5.2	To set a task on synchronization managers' work in two sales systems in case hypothesis is confirmed and it is reasonable to preserve current system for some clients, while implementing the new one.		**Task 2.2.1**	
6.1	To teach 'advanced average performers' how to use the new system after solving problem 1-5(?), to estimate if they are capable of becoming "stars". If not – to perform comparative study of both groups' work and to provide additional training to 'advanced average performers' in accordance with efficiency model.	6.1.1	To create an efficiency model indicating weighing coefficients of positive influence on closing a transaction	TC: If we use theoretical evidence, the companies profile is not taken into account, but the new sales system's requirements are. If we use data generated in the company, they capture the company's profile, but were gathered in accordance with previous sales system's requirements.
		6.1.2	To study the "stars'" work and adjust the efficiency model.	TC (ITB): Long-term study will provide an adequate model, but we can't use it for training now. In the meanwhile the training should be performed on the spot, otherwise the system won't work.
		6.1.3	To design a training/mentoring program using data obtained while solving tasks 6.1.1 – 6.1.2	TC (ITB): mentoring program should be carried out by the best employees but it will distract them from main work.

1.1.2	**-**	**1**	**+**	**If “C” marker is applied, CRM system automatically uses procedural funnel. If markers A or B are applied, results-based funnel is used to analyze transactions. Нужно проверить русский текст, там то ли ошибка, то ли я не поняла о чем речь.**
	Both systems’ requirements are respected	Funnels in CRM	Mistakes in choosing one of the funnel	
	+	2	-	
1.3.1	-	Universal	+	This contradiction is solved together with the problem 2.1.2, since the CRM system supply managers with typical patterns after a transaction marker and certain sales channel are applied. Solution: to turn “Sales channel” field into an active one.
	Precise situation description	Decision-making patterns	Complications in choosing a pattern	
	+	Grouped in accordance with channels and categories	-	
1.3.2	+	Many	-	To group the ideas in accordance with sales channels and decision making units. Preparation for a meeting in this case should include choosing approximately 5 key ideas (the value is empiric) and using only targeted matrix. The targeted matrix is to be organized by analogy with the task 1.3.1.
	A brighter and more valid USP (Unique selling point)	Ideas of client’s needs	Reproduction “by heart” during conversation with a client.	
	-	Few	+	

2.2.1	**+**	**Different managers use different systems**	**-**	**To be solved through contradiction analysis**
	Optimal usage of managers' experience	Sales managers	Quantity of standards being maintained	
	-	All managers use both systems	+	
3.1.1	-	Needs are processed in a single stage	+	To indicate in CRM system time duration for each stage of the funnel per each transaction type. Once indicated duration of "Needs recognition" stage is over, the system informs managers that the stages are highly likely to switch soon.
	Локализация работы с проблематикой и критериями выбора Не поняла смысл -- не могу перевести	Sales Funnel	Stages are simple to identify	
	+	Needs are processed in 2 stages	-	
3.1.3	+	"Solution of client's doubts" stage	-	We are going to solve this through ARIZ tools (so far the process was intuitive). It is required to find simple and reliable way of locating decision making units' doubts.
	Correspondence to long-lead sales cycles' logic	Sales Funnel	Identification problems	
	-	"Handling rejection" stage	+	

3.2.2	-	**Only quantitative**	+	**Qualitative parameters should be transferred into clear figures (as a result at least 3 needs and 3 criteria were located, leading to advantages). CRM-system should be capable of processing such parameters and displaying them in a transaction window.**
	Transaction progress is easily correctable → conversion	Parameters used in sales funnel	Data is difficult to obtain	
	+	Quantitative and qualitative	-	
3.2.4	-	Manually	+	Leads are to be approved in CRM-system by marketing department employee. He or she also distributes leads for further processing → CRM should have a tool informing the manager, indicated by marketing department employee, that there is a new lead to be processed.
	Leads' safety (leads are guaranteed from being lost)	Mode of leads' entry into CRM-system	Bad records are likely to appear in CRM-system.	
	+	Automatically	-	
6.1.1	+	Based on existing experience	-	To be solved through contradiction analysis
	Existing data on using the system is utilized	Efficiency model	Training program is corresponding to the requirements of the new system	
	-	Brand new model	+	

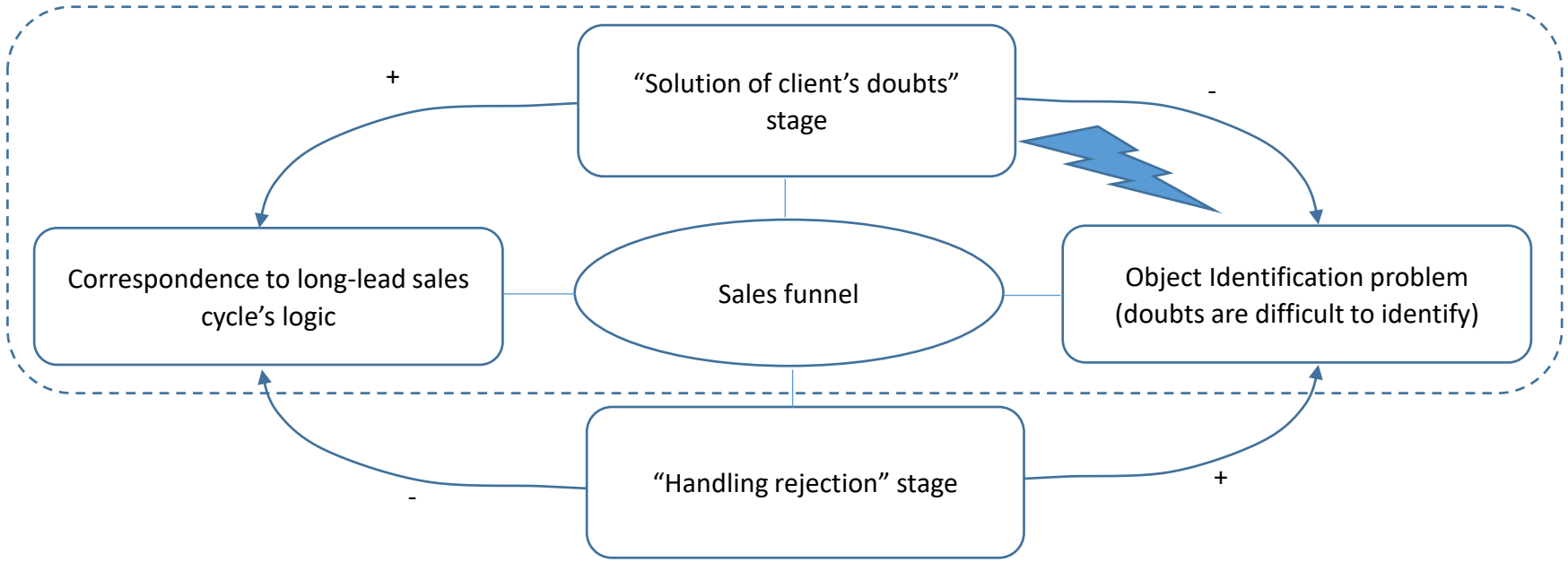
6.1.2	**+**	**Based on current situational awareness**	**-**	**To be solved through contradiction analysis**
	Model launching time	Efficiency model	Training efficiency (specifically growth points are affected)	
	-	Based on behavior comparison of average performers and stars.	+	
6.1.3	+	Average performers with 1 year of experience or more	-	To be solved through contradiction analysis
	Time spent by the best employees on main work	Who is training/mentoring	Skills are “concentrated”	
	-	Top experts	+	



The idea of differentiating the managers in accordance with sales schemes, with only one training program seems to be a promising research direction.

Solution: basic training includes dealing with C-clients, and if a manager is recognized to have growth potential, he or she can be promoted to dealing with A and B clients after additional training. Thus we have a unified training program for all sales managers, while their differentiation in accordance with sales scheme is preserved.

Supereffect: (sometimes a solver is lucky enough to obtain supereffect – additional value within a solution found which was not forecasted): gradual employee's potential reveal, additional motivation through growth of tasks' complexity and income, decreasing mistakes in personnel solutions.



IER rule:

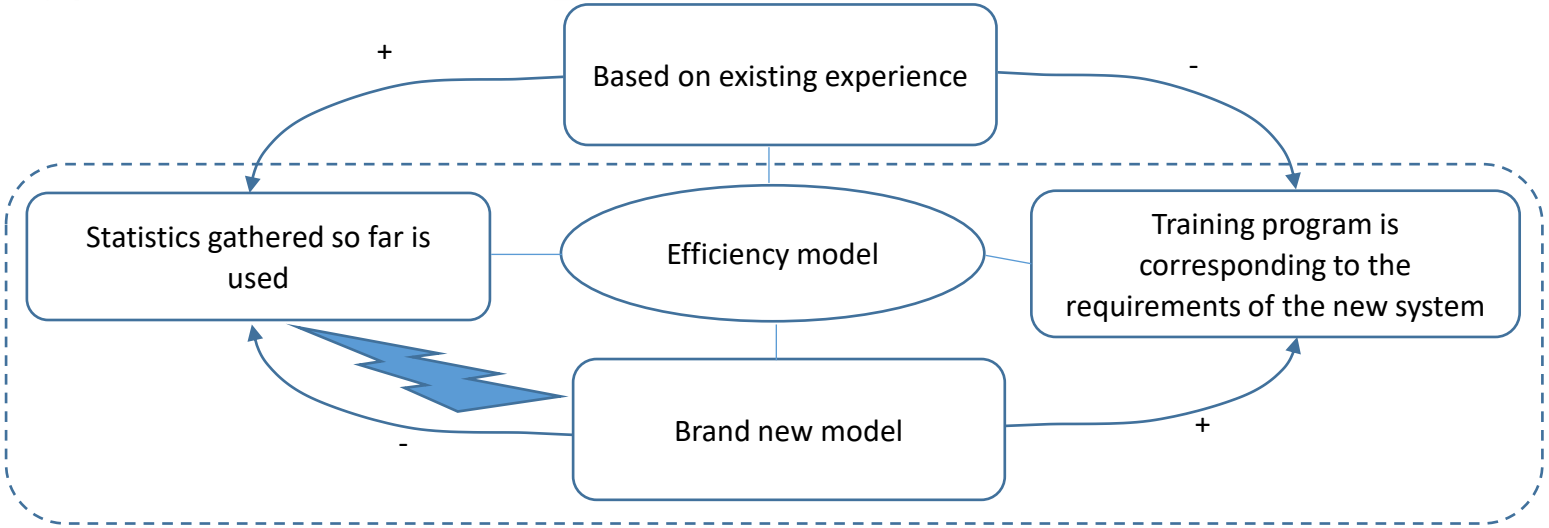
X-element is identifying the client's doubts (the object) itself without fail. The focus is on those doubts which influence a transaction outcome considerably.

Resources:

Solution of client's doubts stage Tool	Identification process - Object
Approaching contract	Personal communication with decision making unit
New big client	Data from other stakeholders
Personal features of decision making unit	Experience in closing similar transactions
Top management's interest in a transaction	Decision making unit's behavior analysis

After resources were inserted into IER formula, the following assumptions were obtained*:

1. Once the big contract is approaching, the manager of sales department (MSD) takes the control over the transaction.
2. If the client is new and a big transaction is being negotiated we analyze personal features of the contract partner and record them in "contact" window of CRM system. The data are: personality type in accordance with DISC model (also Adizes-Madanes Enneagram types model can be used), interests, behavioral peculiarities. The managers are trained with detailed cases' analysis and examples.
3. If transaction is big, the requirements of decision making people are to be studied thoroughly at "Needs recognition" stage. This should be done even more attentively in case current transaction is considerably bigger than the client's average or the client came from a competitor. Afterwards, while transaction is in progress we can trace deviations from these requirements, which will be reliable indicator of doubts.
4. In case personal communication with decision making unit is temporarily stopped for some reason (e.g. transaction comes to a stage where other decision making units (DMUs) are engaged), this communication should be continued at any excuse at least once a month.
5. Communication with people, influencing decisions should be maintained in order to check for any deviations from intended path. In case deviations are big, DMU should be contacted.
6. Experience in closing similar transactions should be used – while retrospective analysis is performed at extended monthly sales meeting, doubt identification issue should be necessarily discussed for biggest transactions.



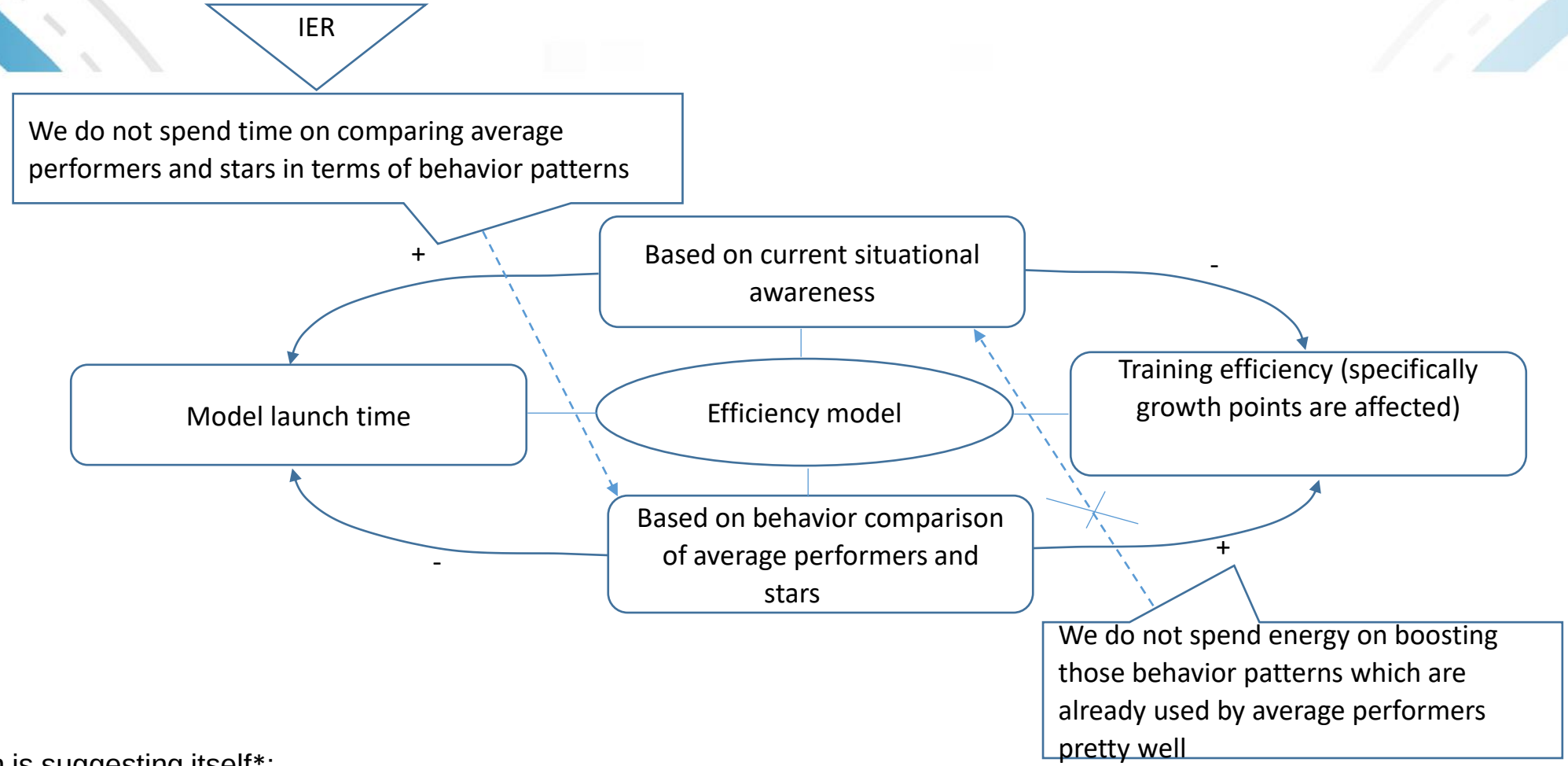
IER rule:
X-element itself provides using statistics, gathered so far, by the efficiency model which was designed for the new sales system.

Resources:

Brand new model- tool	Existing statistics - object
A list of behavior patterns typical for current sales system.	Existing experience
A list of unique behavior patterns	Conversion data per sales channel
	Managers' repots
	Documented summaries of meetings

After resources were inserted into IER formula, the following assumptions were obtained*:

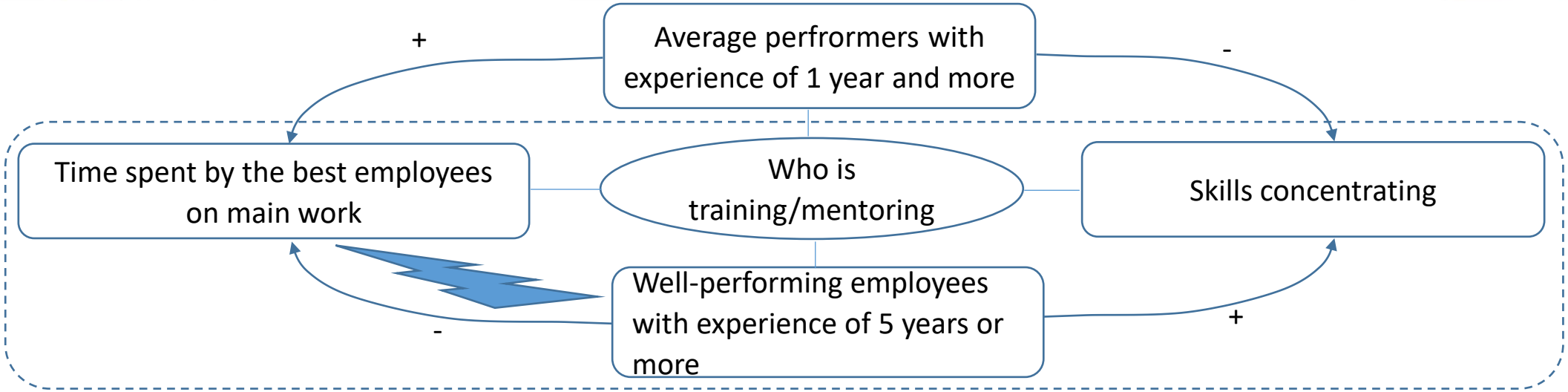
1. To describe behavior patterns usable in efficiency model of the new sales system and to find among them those which are also suitable for current system. To use existing experience and learning cases to practice these “common” behavior patterns.
2. To analyze sales channels where A and B transactions’ conversion was above average. To use experience obtained in these transactions as a tuning fork for the new system’s efficiency model.
3. To analyze sales channels where A and B transactions’ conversion was below average. To perform a quasiexperiment of applying new sales system’s efficiency model to these transactions. To specify behavior patterns which, in experienced employees view, could help. To pay additional attention to these specified patterns during training.
4. To prove assumptions made in pp. 2 и 3, managers’ reports and minutes of meetings should be used, which were made while transactions being analyzed were in progress.
5. To use managers’ reports and minutes of meetings to prepare cases which are to be used afterwards for chosen behavior patterns’ training. (In case a pattern is a new one, a case can use a situation where this pattern would have influenced the transaction positively).



<u>IER approach is suggesting itself*</u>:

IER 6.1.2-1: X-element works in a way that behavior patterns which are underused by average performers can be located without comparing their work with that of stars.

Solution: the situation is to be analyzed by the stars themselves. If stars hold a series of meeting together with average doers and if they (stars) have a complete list of behavior patterns, then afterwards the difference will be easily located during an introspection with stars. This procedure will not take more than 1 week.



IER Rule:
X-element prevents wasting best employees' time on training/mentoring

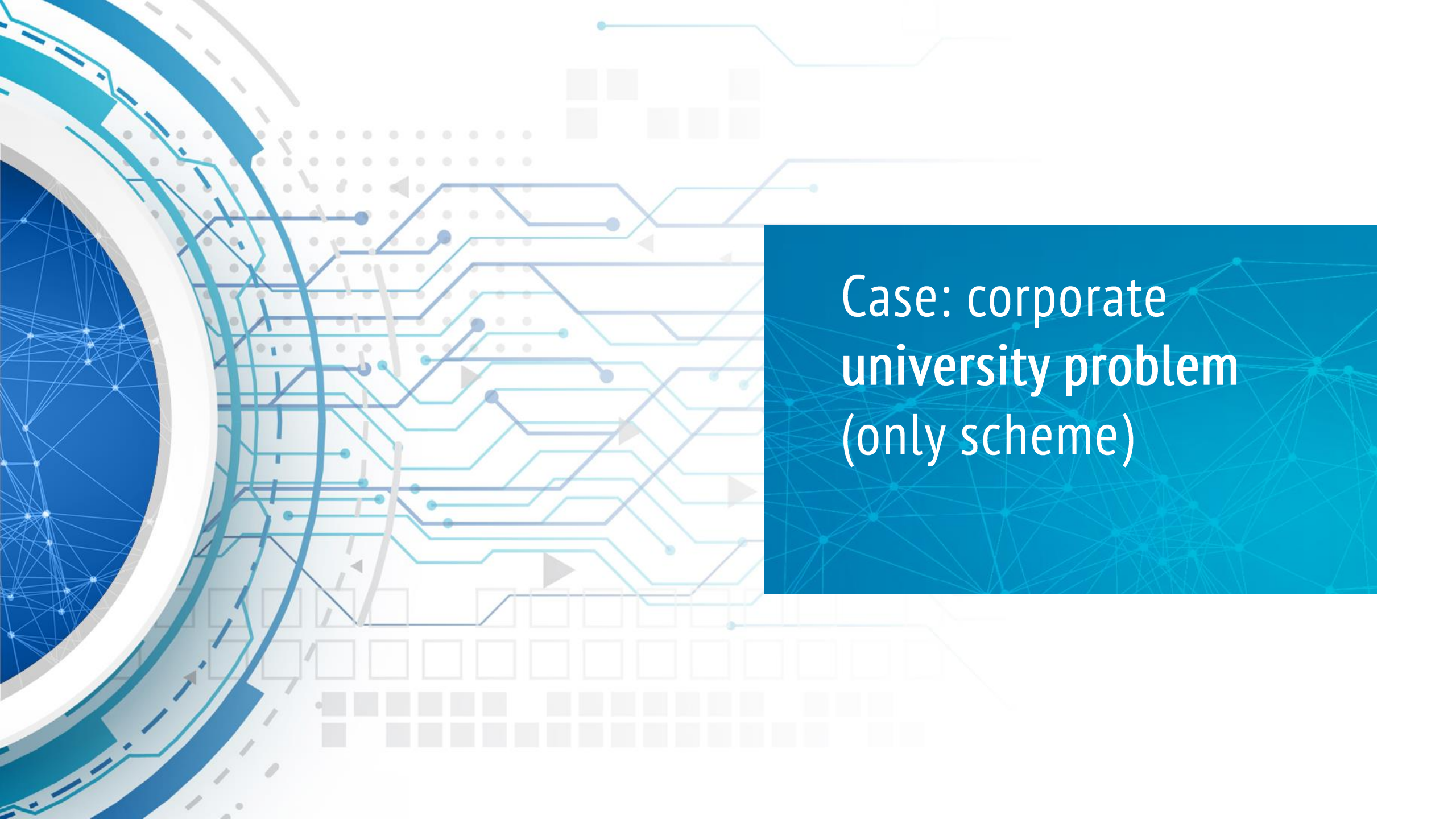
Resources:

Experienced employees as mentors- Tool	Time spent by the best employees on main work - Object
Long-lead sales experience	Time to organize meetings
Company's product knowledge	Time to analyze data about transaction
Clients' database	Time to contact clients
Reputation inside the industry	Time to make reports in CRM-system
Expert knowledge of clients' business	Time to have lunch and some rest during a day
Psychological competence	

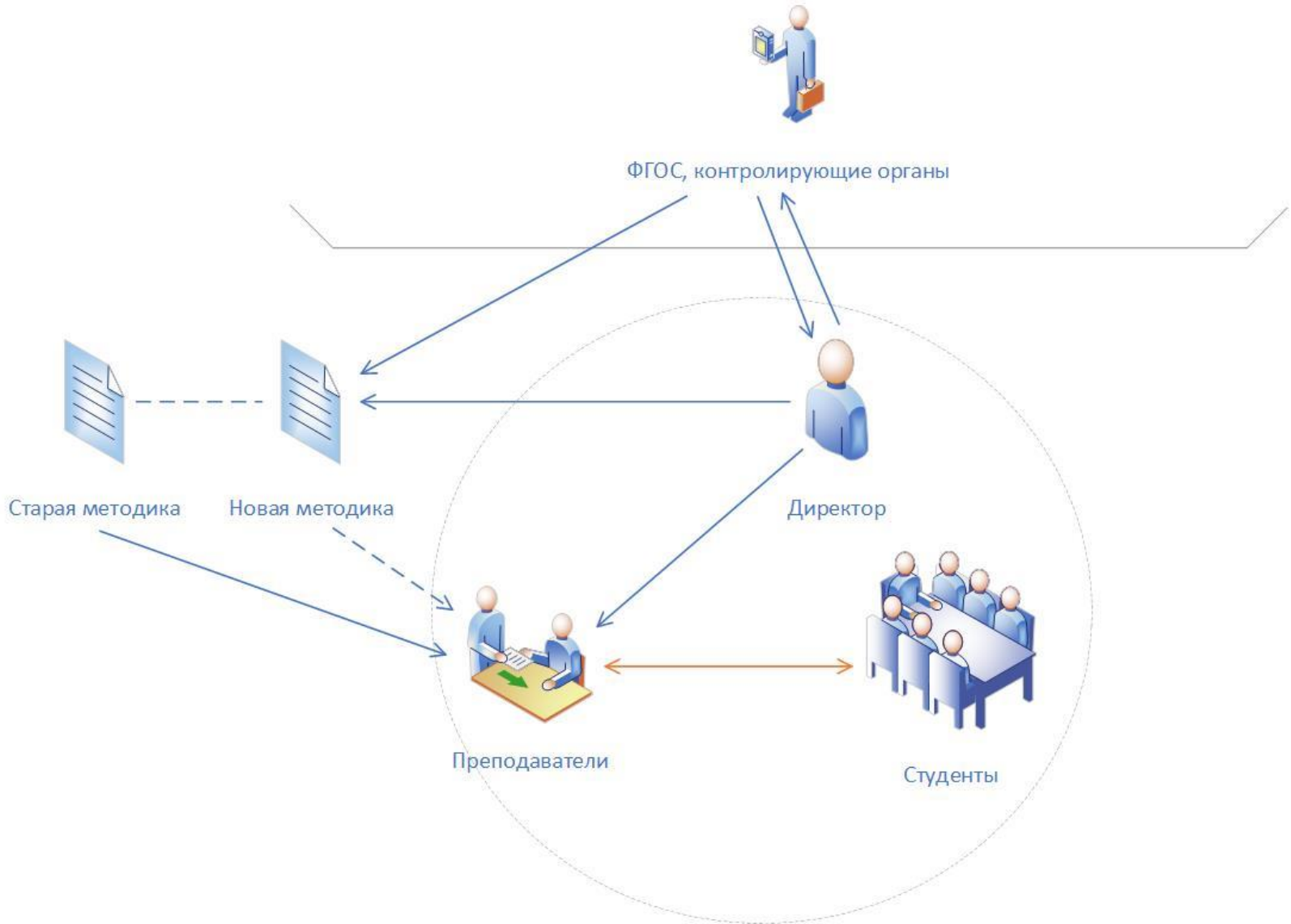
Once resources were inserted into IER formula we received the following (we can see that the Object's resources are doing better with this very IER):

1. New employee's on-boarding is divided into 2 parts: introductory course implies giving some background and answering some of newcomer's questions. It is performed by an employee who has got 1 or more years of experience and shows good results in sales.
2. Second part is «shadowing». This is a name for a technology when a newcomer tries to copy master's work. While doing so he encounters a lot of oddities which he is called to note down as questions. Afterwards these questions are to be discussed with the mentor. The same technology can be used during contacts of an experienced employee with clients.
3. This is where practice adopted by many companies comes from – a newcomer's progress journal. Notes, taken by a newcomer are consolidated in a paper or electronic workbook with pre-organized fields. In this case data are easier to gather and to analyze.
4. After second stage of on-boarding is successfully finished, the experienced employee invests some time to polish newcomer's skills by supervising his preparation for important meetings and contacts.

So, it is irrational to exclude experienced employees from mentoring process, but there are ways to decrease their time input in the process 2-3 times without results' decline. The contradiction is partially solved.


Case: corporate
university problem
(only scheme)

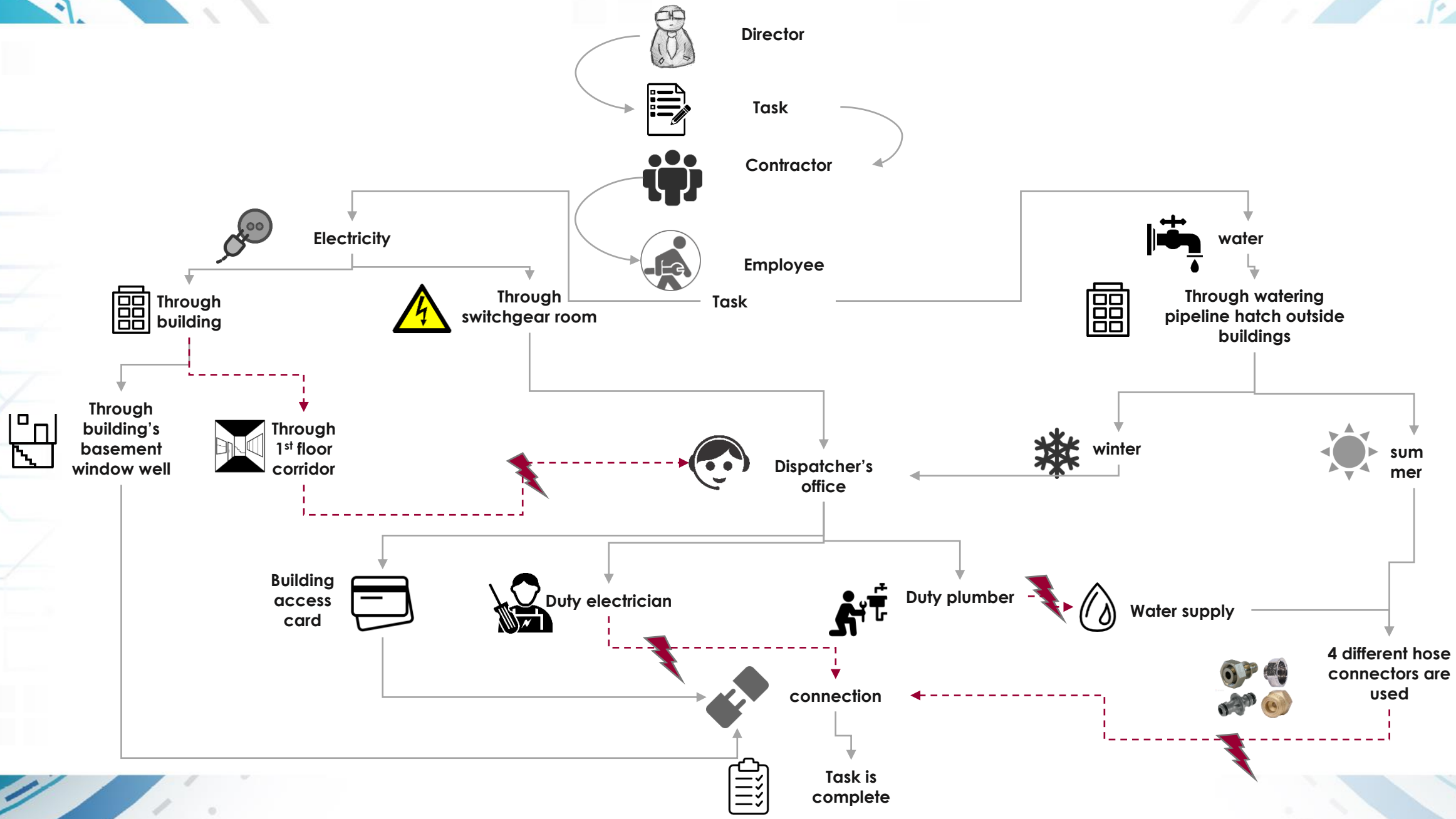
Case


ФГОС, контролирующие органы
Старая методика
Новая методика
Директор
Преподаватели
Студенты

1. SS	1.1	What can be done to make old teaching techniques less convenient to use?
	1.2	What can be done to make new teaching techniques as convenient for teachers as possible?
	1.3	What can be done to make FES to speed up new teaching techniques' spreading among teachers? (to reduce opposition).
2. Layers	2.1	What can be done to let teachers implement new teaching techniques without time expenditure?
	2.2	How can director's activity contribute to new teaching techniques' implementation by teachers?
3.Connections, functions, processes	3.1	What can be done to make students support new teaching techniques' implementation by teachers? (The whole interaction process between students and teachers should be studied).
	3.2	What can be done to make old teaching techniques' strengths promote new teaching techniques usage?
4. Place and material	4.1	What can be done to make teachers' experience in old techniques contribute to new teaching techniques implementation?
	4.2	What can be done to make teachers' experience in old techniques' implementation contribute to new teaching techniques implementation?

Case: utility **connection problem** (only scheme)

Scheme: Hotel maintenance in Sochi



Tasks

№	Analysis object in MFS	Tasks	
		№	Task
1	Interaction between the system and elements of supersystem (dotted line)	1.1	*Engineering solutions. A lot of problems with utilities take place because existing mechanical solutions do not correspond to actual usage environment – what can be done to make mechanical solutions correspond to actual usage environment without considerable altering of existing utilities?*
		1.2	*Financing. So far there were several suggestions on optimizing utilities' connection points, but they were not supported by the budget holders.* ► what can be done to persuade the owner that additional expenditures are inevitable.
		1.3	Audio comfort. There are so called "quiet hours" at the hotel, introducing time limits for noisy works; till 10 a.m., from 1 to 3 p.m. In case of emergency, conflicts with guests can occur ► what can be done to exclude additional noise load for guests without decreasing labor efficiency.
2	Layers	2.1	*Needs layer* ► what can be done to minimize utilities' usage, providing nevertheless necessary output.
		2.2	*Layer of connection types. After connection is made the buildings and incoming switchgear are left unblocked, hoses and wires, stretching from entrance lobby make walking around unsafe* ► what can be done to provide safety after connection without blocking buildings and incoming switchgear?

Tasks

№	Analysis object in MFS	Tasks	
		№	Task
2	Layers	2.3	*Operating personnel layer. Allied services workers are to be engaged at the moment to make connection* ► What can be done to allow any worker on duty to make a connection by himself without breaking safety instructions?
		2.4	*Seasonality layer* ► what can be done to avoid winter shutdown without risk of damaging pipes, fittings and valves in case of frost, thus avoiding calling a duty plumber to start/stop water supply.
		2.5	*Layer of connection point location.* ► what can be done to provide connection not only through the building?
		2.6	*Layer of connection point location* ► how can electricity and water connection points be situated in the same place without rearranging the lines?
		2.7	*Operating personnel layer* ► what can be done to decrease the quantity of people involved without decreasing the volume of work?
		2.8	*Connection type layer* ► what can be done to place connection points outside the buildings, keeping them inaccessible for guests.
6	Place and materials	6.1	*Operating personnel* ► how can people's experience and skills be used? What can be done to involve people into optimization process?

Tasks

№	Analysis object in MFS	Tasks	
		№	Task
3	Connections	Partially analyzed in pp. 2.3 and 2.5	
		3.1	Operational personnel connections. *Allied services workers are to be engaged at the moment to make connection* ► What can be done to allow any worker make connection by himself without risk of electric shock or damaging equipment due to incompetence.
4	Proccesses and functions	4.1	What can be done to avoid obtaining a building access card at the dispatcher's office, thus decreasing unnecessary movements, but to respect safety instructions at the same time?
		4.2	What can be done to exclude unnecessary movements but to fulfill all the necessary work?
		4.3	What can be done to fulfill amenities' maintenance without limiting guests' access to them?
5	Groups	5.1	*A group of interacting services ► how can working processes of different services be synchronized in order to decrease time needed?*
		5.2	*A group of necessary conditions ► what can be done to unify all water connection points in order to remove the necessity of using connectors of 4 different types.*