МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ВНЗ «УКРАЇНСЬКИЙ КАТОЛИЦЬКИЙ УНІВЕРСИТЕТ»

Факультет суспільних наук

Кафедра управління та організаційного розвитку

Магістерська робота

на тему: **«Continuous Improvement Culture = long-term company competitiveness» (Leoni culture transformation through TOYOTA Production Management Approach) in the period of crisis**

Виконали: студенти 2 курсу, групи СУП18м

спеціальності 073 « Менеджмент»

Герилів Л.Р.

Шабан Н.Б.

Керівник к.п.н. Рождественський А.А.

Рецензент д.е.н. Борщевський В.В.

Львів 2020

CONTENT

INTRODUCTION

Globalization has brought significant benefits to the business. For example, it has given them the opportunity to explore new markets, benefit from falling trade barriers, and adapt more quickly to technological progress. However, it has also sharpened competition. As a result, it is increasingly difficult for organizations to achieve, maintain, and improve business competitiveness.

Globalisation means competition is growing. You are not the only ones selling a certain product, service or feature. And with the world a much smaller place than it once was, not only do you need to be concerned about local competition, but foreign competition too.

Industry 4.0 is bringing with it greater use of automation across diverse industry sectors. It’s not just impacting on the manufacturing and automotive industries, but across FMCG and oil and gas industries too. While this paves the way for greater productivity and quality, you need to be able to adapt.

Mass customisation is a growing trend, and you need to be able to respond to more people wanting different versions of the same thing. Regardless of how simple or complex your product is, mass customisation at mass levels is difficult. Manufacturing companies are being forced to explore new operational strategies for producing highly customised products.

Finally, customers are becoming more and more demanding. You need to meet these demands. If you don't, you can be sure at least one of your competitors will.

Facilities that focus on improving continuously become more competitive over time and can maintain their advantages in their industry, but only if the improvement efforts are done correctly. Taking good baseline measurements and taking ongoing measurements will help identify the effectiveness of the efforts being made.

Today, any business wanting to maintain a competitive edge should be focused on continuous improvement.

Continuous improvement is a long-term strategy for improving your business, processes, and ways of working to drive greater productivity and profitability. It's

about more than just finding a fix for a single problem. It's about an ongoing, continual drive and commitment to better performance.

The concept dates back to the 1940's. One of the pioneers of this philosophy was W. Edwards Denning, who argued that organisations need a dedication to ongoing improvement in order to meet customer needs, beat the competition, and maintain a happy workforce.

Though continuous improvement is not a new concept, today, there is more pressure than ever for manufacturing companies to improve their performance.

The graduate work is devoted to the project of cultural transformation in the international company following Toyota (Lean) production approach. The idea of the transformation was driven by the necessity of preparation of personnel to new challenges of nowadays, to develop ability to adopt, improve and make things better. "Classical management approach" is based on planning and control tools which are used to receive results never mind the way they are achieved. To be fast with achieved result supervisor gives a task to an employee with already prepared solution because it is faster, but faster only in a short perspective period, while the employee learns to receive solutions and his/her brain is getting used to such kind of routine. The approach which LEONI has chosen out of suggested world practices Toyota production is based on the following principle:

- Development of people;
- Intrinsic Motivation (essential);
- Management and improvement routines;
- New way of thinking and acting.

The main reasons for such a project were:

- Company stagnation (after a rapid successful development);
- Not motivated management team (fluctuation within management team);
- Appointment of a new managing director in a crucial life cycle of the company life.

The object of research is LEONI cultural transformation through Toyota production approach.

The purpose of the research is analysis and development of the main directions of cultural transformation at LEONI following Toyota production approach.

This project plays an important part in our company managerial life while it helped us to prove an incredible role of HR in strategic and daily (operational) business of the company. We as HR Managers and Managing director were the first employees who start the first steps of the transformation: empower management team for a new challenge and make them to believe in necessity of urgent changes within the team and in the company overall.

Goals of the project:

1. Management team development.
2. Preparing a company to a new challenge (one more plant to be built and developed).
3. More effective usage of human resources.
4. Establishing of lean processes not only in production but also in administrative sphere.
5. Costs saving through effective management.
6. Management culture change.
7. Change of employees mind.

Graduate work consists of: introduction, three chapters, including 7 sections, conclusions, a list of references of 11 items and 1 appendix. The text of the thesis contains 3 tables and 42 pictures. The total workload is 65 letters.

CHAPTER 1

THEORETICAL PRINCIPLES OF CONTINUOUS IMPROVEMENT CULTURE. LEONI AG AND LEONI UA VISION

1.1. TOYOTA Production Management Approach.

A production system based on the philosophy of achieving the complete elimination of all waste in pursuit of the most efficient methods. Toyota Motor Corporation's vehicle production system is a way of making things that is sometimes referred to as a "lean manufacturing system," or a "Just-in-Time (JIT) system," and has come to be well known and studied worldwide.

This system, more than any other aspect of the company, is responsible for having made Toyota the company it is today. Toyota has long been recognized as a leader in the automotive manufacturing and production industry [8].

Industrial engineering is the wider science behind TPS.

Toyota received their inspiration for the system, not from the American automotive industry (at that time the world's largest by far), but from visiting a supermarket. The idea of just-in-time production was originated by Kiichiro Toyoda, founder of Toyota [9]. The question was how to implement the idea. In reading descriptions of American supermarkets, Ohno saw the supermarket as the model for what he was trying to accomplish in the factory. A customer in a supermarket takes the desired amount of goods off the shelf and purchases them. The store restocks the shelf with enough new product to fill up the shelf space. Similarly, a work-center that needed parts would go to a "store shelf" (the inventory storage point) for the particular part and "buy" (withdraw) the quantity it needed, and the "shelf" would be "restocked" by the work-center that produced the part, making only enough to replace the inventory that had been withdrawn [3] [10].

While low inventory levels are a key outcome of the System, an important element of the philosophy behind its system is to work intelligently and eliminate waste so that only minimal inventory is needed [9]. Many Western businesses, having observed Toyota's factories, set out to attack high inventory levels directly without

understanding what made these reductions possible [11]. The act of imitating without understanding the underlying concept or motivation may have led to the failure of those projects.

This production control system was established based on many years of continuous improvements, with the objective of making the vehicles ordered by customers in the quickest and most efficient way, in order to deliver the vehicles as swiftly as possible. The Toyota Production System (TPS) was established based on two concepts: "jidoka" (which can be loosely translated as "automation with a human touch"), as when a problem occurs, the equipment stops immediately, preventing defective products from being produced; and the "Just-in-Time" concept, in which each process produces only what is needed for the next process in a continuous flow.

Based on the basic philosophies of jidoka and Just-in-Time, TPS can efficiently and quickly produce vehicles of sound quality, one at a time, that fully satisfy customer requirements.

TPS and its approach to cost reduction are the wellsprings of competitive strength and unique advantages for Toyota. Thoroughly honing these strengths is essential for Toyota's future survival. They use these initiatives and develop our human resources to make ever-better cars that will be cherished by customers.

For Toyota, jidoka means that a machine must come to a safe stop whenever an abnormality occurs. Achieving jidoka, therefore, requires building and improving systems by hand until they are reliable and safe. First, human engineers meticulously build each new line component by hand to exacting standards, then, through incremental kaizen (continuous improvement), steadily simplify its operations.

Eventually, the value added by the line's human operators disappears, meaning any operator can use the line to produce the same result. Only then is the jidoka mechanism incorporated into actual production lines. Through the repetition of this process, machinery becomes simpler and less expensive, while maintenance becomes less time consuming and less costly, enabling the creation of simple, slim, flexible lines that are adaptable to fluctuations in production volume.

The work done by hand in this process is the bedrock of engineering skill. Machines and robots do not think for themselves or evolve on their own. Rather, they evolve as we transfer our skills and craftsmanship to them. In other words, craftsmanship is achieved by learning the basic principles of manufacturing through manual work, then applying them on the factory floor to steadily make improvements. This cycle of improvement in both human skills and technologies is the essence of Toyota's jidoka. Advancing jidoka in this way helps to reinforce both manufacturing competitiveness and human resource development.

Human wisdom and ingenuity are indispensable to delivering ever-better cars to customers. Going forward, they will maintain our steadfast dedication to constantly developing human resources who can think independently and implement kaizen.

Roots of the Toyota Production System. The Toyota Production System (TPS), which is based on the philosophy of the complete elimination of all waste in pursuit of the most efficient methods, has roots tracing back to Sakichi Toyoda's automatic loom. TPS has evolved through many years of trial and error to improve efficiency based on the Just-in-Time concept developed by Kiichiro Toyoda, the founder (and second president) of Toyota Motor Corporation.

Waste can manifest as excess inventory, extraneous processing steps, and defective products, among other instances. All these "waste" elements intertwine with each other to create more waste, eventually impacting the management of the corporation itself.

The automatic loom invented by Sakichi Toyoda not only automated work that used to be performed manually, but also built the capability to make judgments into the machine itself. By eliminating both defective products and the associated wasteful practices, Sakichi succeeded in rapidly improving both productivity and work efficiency.

Kiichiro Toyoda, who inherited this philosophy, set out to realize his belief that "the ideal conditions for making things are created when machines, facilities, and people work together to add value without generating any waste." He conceived

methodologies and techniques for eliminating waste between operations, between both lines and processes. The result was the Just-in-Time method.

The Toyota production system has been compared to squeezing water from a dry towel. What this means is that it is a system for thorough waste elimination. Here, waste refers to anything which does not advance the process, everything that does not increase added value. Many people settle for eliminating the waste that everyone recognizes as waste. But much remains that simply has not yet been recognized as waste or that people are willing to tolerate.

People had resigned themselves to certain problems, had become hostage to routine and abandoned the practice of problem-solving. This going back to basics, exposing the real significance of problems and then making fundamental improvements, can be witnessed throughout the Toyota Production System.

Via the philosophies of "Daily Improvements" and "Good Thinking, Good Products, TPS has evolved into a world-renowned production system. Even today, all Toyota production divisions are making improvements to TPS day-and-night to ensure its continued evolution.

The Toyota spirit of monozukuri (making things) is today referred to as the "Toyota Way." It has been adopted not only by companies in Japan and within the automotive industry, but in production activities worldwide, and continues to evolve globally.

1.2. LEONI AG

LEONI AG today & its VISION:

- Innovative products and technologies for tomorrow’s world

The name LEONI stands for first-class competence in wires, cables, wiring systems and related products. Our innovative solutions are used in the global automotive industry as well as in key industrial sectors such as telecommunications, IT, health and energy. Focused on delivering key customer benefits, they provide the best connections possible for nearly all areas of modern life.

- Partners in industry

As a global supplier of wires, optical fibers, cables and cable systems, we have been keeping pace with the developments of the last few decades as our world has become more densely networked. This has made us a sought-after partner and development supplier to leading international industrial companies. We work in close partnership with our customers and we also use our ideas and expertise to help them reduce their overall environmental impact.

- A global leader

Founded in 1917, LEONI is now a global wiring systems and cable technology leader. More than 92,000 highly qualified and motivated employees work together in 32 countries to maintain and expand our position as a global market leader. To do this, we focus on the following high-growth core markets: automotive and commercial vehicles, industry and the healthcare sector, communications and infrastructure, household and electrical appliances, wires and strands. We proactively support our customers at a global and local level, throughout the whole development process. Everything we do is focused on understanding our customers' requirements and delivering a tailored solution that precisely meets those needs.

- Forward-looking products and services

LEONI offers a unique portfolio of products, technologies and services for nearly all fields of wiring systems and cable technology and is constantly working on the next-generation environmentally friendly solutions. We were one of the world's first cable manufacturers to develop a holistic sustainability concept for "green technology". This concept underlines our clear commitment to environmental responsibility across the entire product and value chain.

- Intelligent solutions for energy and data management

LEONI is a global provider of products, solutions and services for energy and data management in the automotive sector and other industries. The market-listed group of companies has around 92,000 employees in 32 countries and generated consolidated sales of EUR 4.8 billion in 2019.

LEONI's largest customer group comprises the global car, commercial vehicle and component supply industry, for which the Company makes both standard and

special cables as well as custom-developed wiring systems and related components. LEONI furthermore supplies products and services to these markets: data communication & networks, healthcare, process industry, transportation, energy & infrastructure, factory automation, machinery & sensors as well as marine. An integrated network for research & development, production as well as distribution and service give customers the assurance of tailor-made support at more than 100 locations around the globe. LEONI operates as a solutions provider with pronounced development and systems expertise.

- Innovative solutions based on development and systems partnership

Especially in the automotive industry, LEONI offers substantial added value to motor vehicle manufacturers in both technological and commercial terms by being an innovation partner based on profound understanding of the overall system and by being involved in the early stages of development. In addition to standard and special cables as well as custom-developed wiring systems and related components, the Company’s offering also includes software solutions and such services as architecture design and simulation. LEONI concentrates its automotive research and development work on the sector's major trends such as electromobility, autonomous driving and connectivity – enhanced by lightweight construction solutions, multi-voltage and function integration, but also by logistics and engineering expertise.

- Digital transformation thanks to intelligent products and smart services

LEONI pursues the aim of becoming a leading solutions provider of intelligent systems for the megatrends of energy transmission and data management. To achieve this, the Company's offering will in the future also include intelligent cables, cable systems and components – which is gaining importance particularly in the wake of digitalization and the development of fail-safe systems with a high level of connectivity. The Company is consequently enhancing its know-how in such fields as electronics, sensor technology and big data, and provides such customised smart services as predictive maintenance and error analyses. The digital transformation within LEONI manifests itself in digital processes and software expertise, which is used, for instance, to implement more automated production. Together with

international customer networks and strategic partnerships, this is creating new, digital business models – individually tailored to customers' requirements.

Building a culture of continuous improvement may take several years of careful planning and deliberate action. However, effort will be worth it in the end. The key is to focus on good leadership, methodology, and technology while increasing transparency and communication within your organization. The most important thing to remember is that culture comes from the top.

So, the strategy of the LEONI-Group presents:

- Passion for intelligent energy and data solutions

Our corporate strategy focuses on the optimum exploitation of opportunities from our dynamic economical and technological environment, as well as the global megatrends and aims to develop LEONI into a leading provider of intelligent energy and data management system solutions.

The Group and its two divisions consequently share the vision of 'passion for intelligent energy and data solutions' as basis of this strategy. 'Passion' stands for full commitment and fervour with respect to the upcoming tasks. 'Intelligent' expresses that LEONI's products offer the customer added value thanks to additional, smart properties. 'Energy and data' are the two areas in which LEONI operates with great expertise - the transmission of energy and data. And 'solutions' highlight the trend of increasingly supporting our customers as a solutions and systems provider.

- Performance and strategy-enhancement programme VALUE 21

In the fourth quarter of 2018, LEONI announced a comprehensive performance and strategy-enhancement programme called VALUE 21 for its entire group. The objective is to improve the basis for healthy growth, profitability and cash generation as well as to sharpen our focus on the future markets of electromobility, autonomous driving and digitalization. Vertical integration towards being a more comprehensive systems provider will give both divisions good prospects for growth.

Rigorous implementation of VALUE 21, which aims to lastingly boost profitability and cash flow, constitutes the precondition for this strategic development. Given the differing structures and market orientation of the two

divisions, the measures to boost performance will be specifically tailored to the divisions.

- Wiring Systems Division (WSD)

The objective of the Wiring Systems Division is, with its tailor-made wiring systems and cable harnesses in the automotive sector, to increasingly position itself as provider of vehicle data and energy management solutions with great understanding of a vehicle's overall system. Forming the basis for this is our CARES innovation strategy, which defines the five key areas of innovation for intelligent energy and data solutions in tomorrow's cars: connected mobility, autonomous mobility, revolutionizing productivity, electrified mobility as well as intelligent solutions & services. We are furthermore enhancing our expertise in the fields of electronics and software. And we are also forging ahead with digitalization of our processes.

In the case of the Wiring Systems Division, specifying the strategy by means of VALUE 21 provides, in particular, that market opportunities are given even greater priority in future and that the choice of new projects is based even more on earnings quality and cash flow. The initial aim with such focused growth is to improve cash flow and the EBIT margin, as well as to establish the conditions for further development towards being a systems provider.

- Wire & Cable Solutions Division (WCS)

The Wire & Cable Solutions Division's strategy is, in the automotive market segment, to bolster its leading position in standard and special automotive cables as well as charging cables for electric cars and to decisively enhance as well as upgrade this with new digitalization and solution offerings. The focus is on stepped-up, joint development work with customers, the use of innovative technologies as well as intelligent cable solutions with integrated sensors, electronics and software for such future technologies as electromobility. Here we are focusing, among other things, on cable solutions for charging infrastructure, high-voltage systems and battery connections.

In the industrial market segment, the strategy is aimed at becoming a leading provider of solutions for the energy and data megatrends by way of digital, functional simulation, system integration and creating learning systems.

We are investing in corresponding expertise and technologies, are gradually expanding our range of products and services in the direction of intelligent solutions and establish new business models with our customers. Further objectives include a sharper focus on growth markets as well as better use of our global footprint to address OEM customers that operate worldwide. We also want to continuously improve our operational excellence.

In the context of VALUE 21, we are planning in particular to focus the WCS Division clearly on strategic core markets. The objective is to expand the more profitable business and, with the released resources, to facilitate further development towards being a systems provider.

1.3. LEONI UA.

LEONI UA today & its VISION:

LEONI in Ukraine is positioning itself as a company with “a continuous improvement culture”, that promotes the belief that what is good today is not good enough for tomorrow.

But under this statement stands a long way to success with a variety of obstacles, new challenges, necessity of changes and leadership skills.

LEONI Wiring Systems UA GmbH is a bright example for a close economic, scientifical and technical cooperation between Ukraine and Germany. This has been the most powerful investment project in the field of electrical equipment production for engines and vehicles in the last few years. LEONI Wiring Systems UA GmbH is one of the largest enterprises in terms of capital investment and production with foreign investments in the Lviv Region with more than 65 million Euros invested and more than 5000 workers (2020) are employed here.

The automotive industry is the main customer for which LEONI develops and produces high-quality products - complex onboard systems with integrated electronics. Manufactured at the LEONI Ukraine plant, we supply cable assemblies to LEONI plants in Poland, Slovakia, Hungary, Czech Republic, Germany, Spain, Portugal, Italy, Belgium, the UK, the USA and Austria. Colleagues in these countries assemble cars for renowned car manufacturers such as FIAT, Porsche, Volkswagen, BMW, Audi and Lamborghini.

New investments from LEONI in Ukraine. October the 20th, 2016 in Kolomyia city was held the ceremonial laying of memorable capsule to the foundation of LEONI future plant. Its construction was completed in July 2017 and official opening of the second LEONI plant was September, 2017. The total area is 6300 square meters.

Total investment is about 15 million Euro. In particular,for the construction of an industrial facility will addressed direct 6.6 million Euros and for its equipment - 8 million Euros. There are 1500 workers at this moment (May 2020) and till 2021 the headcount of employees will be more than 2500.

By creating a continuous improvement culture, where everyone in the business is committed to enhancing the productivity and efficiencies of processes, we leverage the knowledge and experience of our production teams. They know the processes best, what works well and what doesn't. Through them we art likely to gain access to simple solutions we didn't even know we had. The result was better quality of products and greater productivity levels.

The knock-on effect of this, is increased customer satisfaction. We are better able to produce a product at the pull of the customer. They'll receive a high quality product that meets their specific requirements, when they want it. The longer-term implication is that our customers will want to buy from us again, and will recommend us to others.

Then there is the impact improved productivity, quality of products and customer satisfaction in consequence of our employees. Feeling valued is a key driver of job satisfaction, and a great way to make people feel valued is to encourage their input

and ideas. By building a continuous improvement culture, we saw a boost to their morale and increase in motivation.

This is continuous improvement. It's not finding a method that works and sticking with it. It's looking at where you are today, setting a goal and doing what needs to be done to reach that goal. Once that goal is met, you start again, finding ways to improve further. It doesn't matter what kind of work — a continuous improvement approach is necessary to keep ahead of the game.

Toyota is one of the best examples we currently have of an adaptive, continuously improving company. Toyota approach proved that long term survival of the company depends on continuous and effective improvement of process and adaptation but not on force to reach results never mind employees' activities influence on the process.

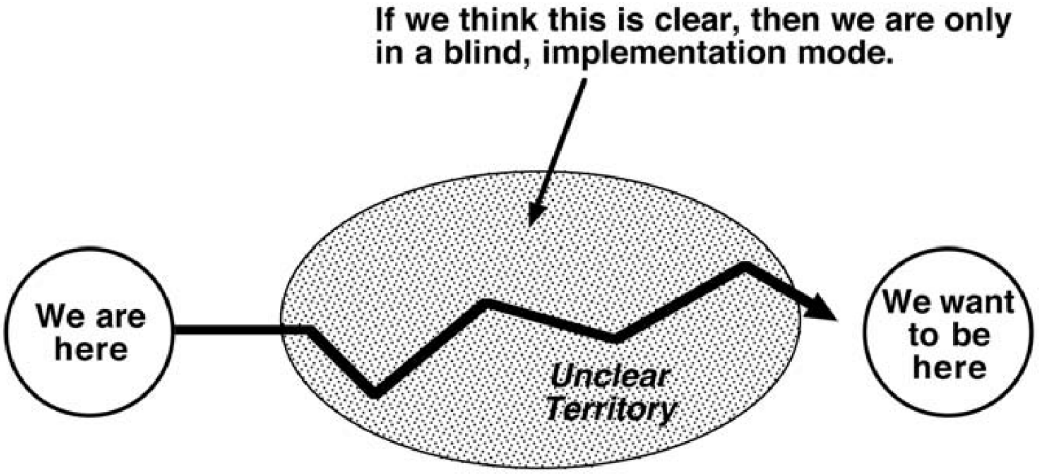
That is why its principles were taken as a guideline for LEONI company in Ukraine.

The first important principle that was taken from Toyota was the understanding where the company is and where we want to be in the future.

You yourself are the benchmark:

- Where are you now?
- Where do you want to be next?
- What obstacles are preventing you from getting there?

There are perhaps only three things we can and need to know with certainty: where we are, where we want to be, and by what means we should maneuver the unclear territory between here and there. And the rest is supposed to be somewhat unclear, because we cannot see into the future! The way from where we are to where we want to be next is a grey zone full of unforeseeable obstacles, problems, and issues that we can only discover along the way. The best we can do is to know the approach, the means, we can utilize for dealing with the unclear path to a new desired condition, not what the content and steps of our actions—the solutions—will be [7].



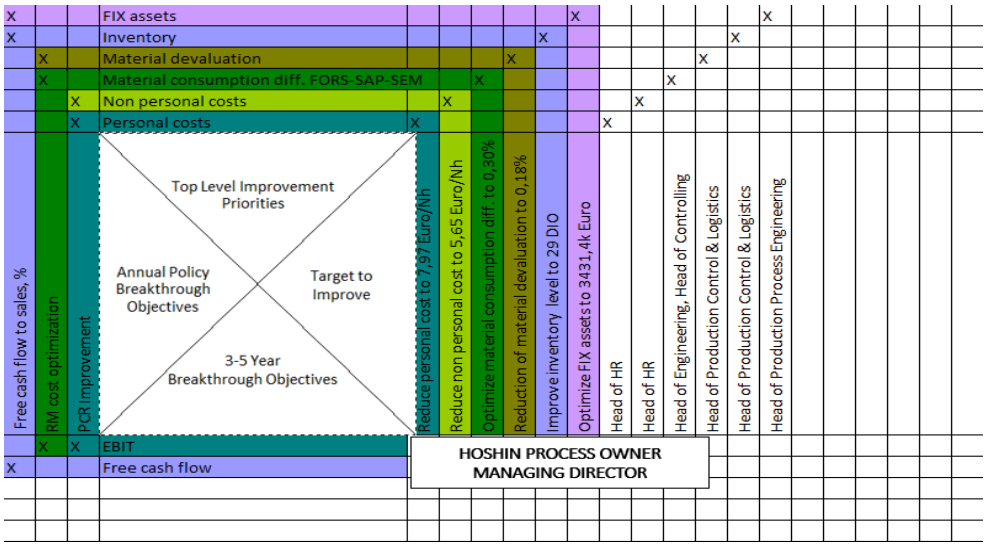
Pic.1.1.

LEONI Ukraine direction (vision) and strategic targets (steps) for the next 5 years see in table 1.2.

Table 1.1. LEONI Ukraine vision

Vision 2025 LEONI UA
Example for others in the LEONI world and not only…
Steps to achieve
1.Team is able to realize and commit selfesteblished goals / Самодостатня команда, що встановлює та реалізовує цілі без втручання ззовні
2. Create and implement effective management style / Створення та впровадження ефективного стилю управління
3.Ideal supplier / «Ідеальний» постачальник
4. Lead team, lead plant / Провідна команда, провідний завод
5.Job = Hobby / Робота приносить задоволення
6. Example for others (reform trigger) / Приклад для інших (індикатор реформ)

To reach a desired level and come closer to vision, the strategic targets are set using Hoshin Canry approach.



Pic.1.2. LEONI Hoshin Canry process

From where starts Continuous improvement culture?

Since the management team was ready to commit the vision of the company and strategic targets for development, daily work over the optimization, implementation and seeking for perfection started.

A continuous improvement starts from understanding of the customer needs. These are the main principles of Lean (Toyota) Culture. To serve customers well, you have to understand how they define good performance. A common mistake is making assumptions about what customers actually value, and then doing the wrong things

Focus on the customer means clear understanding of:

- who is my customer (external, internal);
- what the customer needs, what customer “is ready to pay for”;
- what is valuable output for the customer.

Each company process has its supplier and customer, its input and output. To give the best service to the customer process owner has to think over the customer needs but not how to keep to used routine what is very often happens in the companies. Employees are trained to do some type of routine and they very often do not think how I can do it better and faster.

So the next step for management team was to train our teams to understand the processes they are responsible for from customer perspective. Visualized process is easier to analyze and to find non necessary routine that can be eliminated.

A «continuous improvement culture» is a shared value system that promotes the belief that what is good enough today is not good enough for tomorrow.

Cultures do not change overnight. It takes time, patience, strong communication skills, and most importantly, trust between managers and their teams.

A continuous improvement culture starts with strong Lean leadership team that actively seeks out opportunities to: reduce waste, improve flow through the value stream, and increase the focus on the customer.

This means:

- engaging people at all levels of an organization;
- understanding Lean's side effects on front line employees;
- encouraging teams to offer ideas & use creativity to solve problems;
- requiring participation in kaizens and other improvement efforts.

Lean training is obviously an important part of creating a continuous improvement culture. But leaders of the very best, and most profitable, continuous improvement cultures understand that their employees' job satisfaction is the key to maximizing their Lean success.

LEONI is positioning itself as a company with "a continuous improvement culture", that promotes the belief that what is good today is not good enough for tomorrow.

But under this statement stands a long way to success with a variety of obstacles, new challenges, necessity of changes and leadership skills.

Conclusions to chapter 1

In the section we analyzed Toyota culture and Production management approach. The philosophy of the approach is explained, namely a production system based on the philosophy of achieving the complete elimination of all waste in pursuit of the most efficient methods. Toyota Motor Corporation's vehicle production system is a way of making things that is sometimes referred to as a "lean manufacturing

system," or a "Just-in-Time (JIT) system," and has come to be well known and studied worldwide.

The section presents the general strategy of the LEONI AG and, in accordance with that, the vision of the company in Ukraine for the next five years have been formed. LEONI in Ukraine is positioning itself as a company with “a continuous improvement culture”, that promotes the belief that what is good today is not good enough for tomorrow.

CHAPTER 2

CONTINUOUS IMPROVEMENT CULTURE RESEARCH AT THE MANUFACTURING PLANT

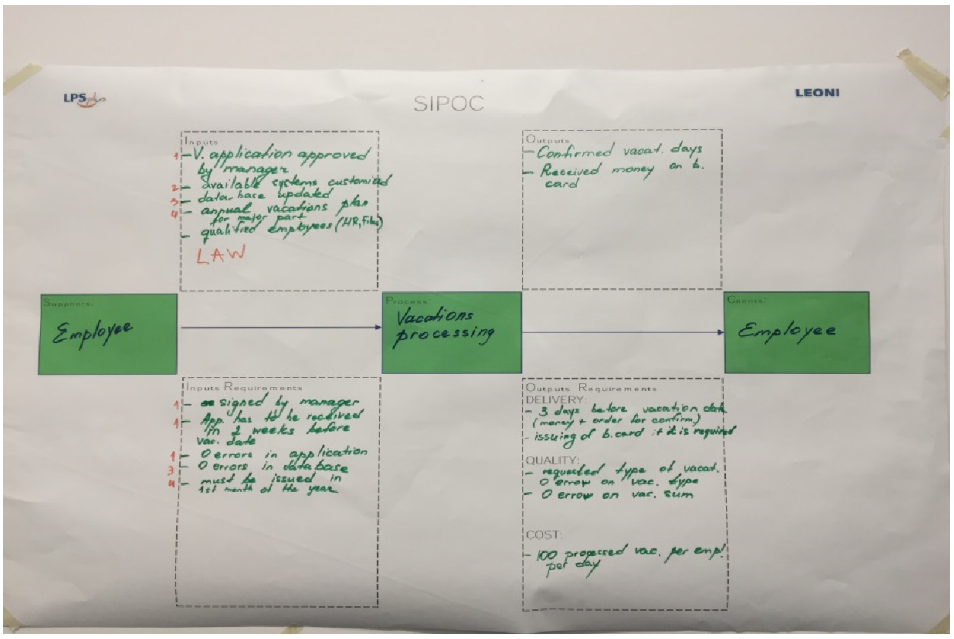
2.1. Practical implementation TOYOTA methods in HR department at LEONI Ukraine.

Flexibility is becoming an increasingly important competitive advantage for businesses. The agile-based workflow creates a new focus on customers. Processes become more flexible and more ideas are born faster: managers transfer responsibility so that staff can address some issues on their own.

Since the management team was ready to commit the vision of the company and strategic targets for development, work over the optimization, implementation and seeking for perfection started on a daily baisis.

The strategic company targets were rolled out to the variety of small projects in all departments. Toyota methods which are commonly used in production in different companies were effectively used in different non-production spheres at Leoni Ukraine. Following TPS approach employees were to analyze existing processes that effect project development to find out adding value steps and eliminate non-value adding steps. Toyota tools (SIPOC, Makigami) were the main tools that were used for the project's implementation.

Using SIPOC tool HR team analyzed several administrative time demanding processes from customer perspective (Supplier-Input-Process-Output-Customer).



Pic.2.1. SIPOC of vacation planning process in the company

2.2. Vacation planning process optimization

Makigami tool (detailed analysis of the process – setting actual condition)

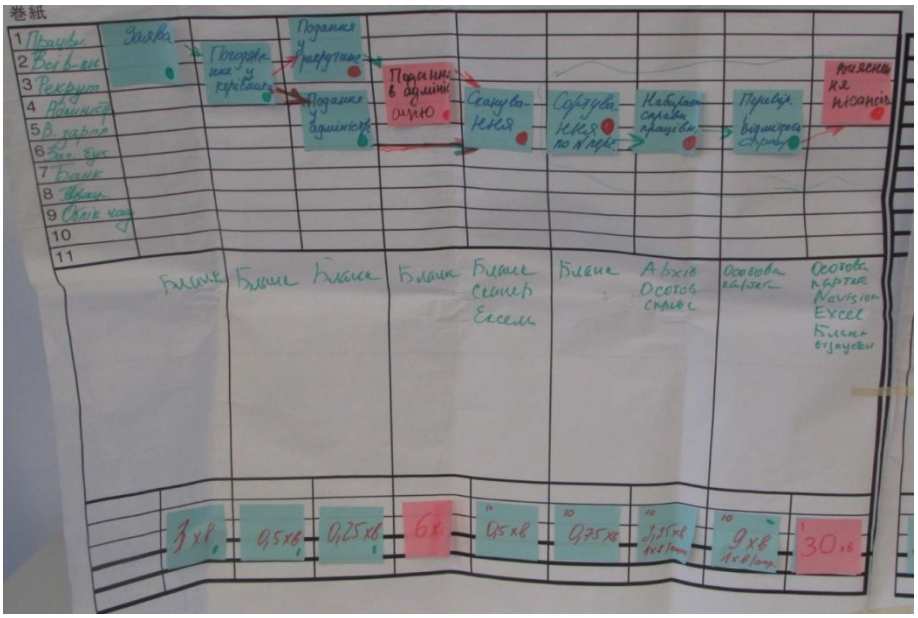
Having the understanding of the process from the customer perspective, it is important to gain understanding of how you deliver that value. Process owner can go into deeper analysis of the process, describing process steps, so called the path from raw materials (or information) to a delivery to a customer, measure them, checking what are value added and non-value added steps of the processes. The tool which LEONI is using for such description is well known value stream in the production and less known in the administration area Makigami.

To prepare a correct Makigami of the process process owner has to visualize the process as he does it in reality with the aim to receive a picture of an actual condition:

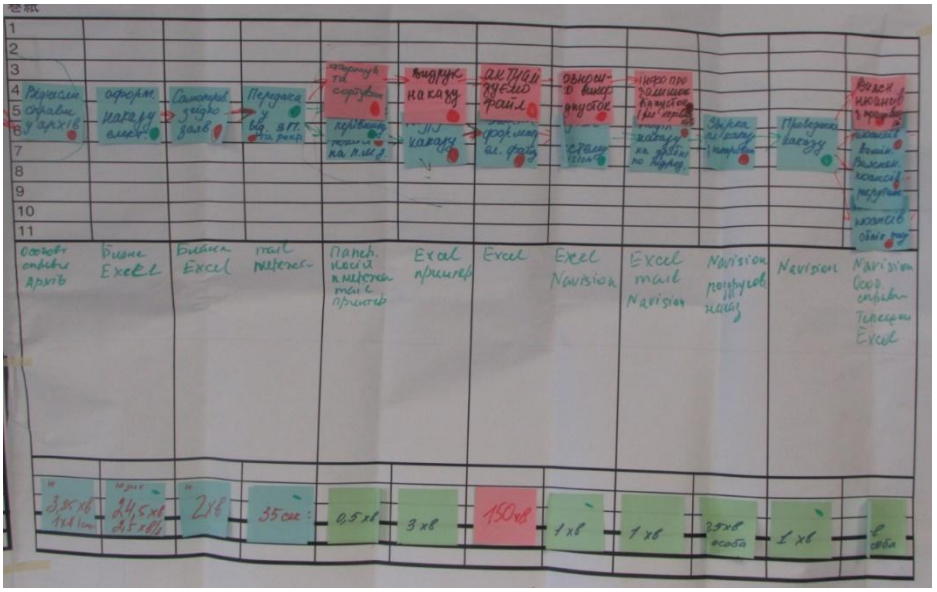
Necessary steps to do:

- define which departments and functions are involved in the process,
- point out all steps of the process,
- find places where there is possibility of mistake or missing information,
- determine timing per each step, total timing
- calculate waste time

- check data carriers.



Pic.2.2. Makigami map of vacation planning process in the company



Pic.2.3. Makigami map of vacation planning process in the company

Each process was described using Makigami tool to understand deeply current condition of the process but not to find any bottle neck or obstacle. Afterwards mentee, coach come together for further discussions of process steps to be taken for

optimization. Common approach is to take those steps in the process that give tact, speed to the overall process.

TOYOTA Improvement KATA

Mentioned below data are a good base for searching for a grey zones and start the optimization process of the process steps through daily experiments with the aim to make the process faster, with more efficiency and quality.

Small, incremental steps let us learn along the way, make adjustments and discover the path to where we want to be. Relying on technical innovation alone often provides only temporary competitive advantage [7].

Toyota's improvement kata is an excellent example of this kind of routine. It tells us how to proceed, but not the content, and thus gives members of the organization an approach, a means, for handlingan infinite variety of situations and being successful.

In Japan such patterns or routines are called kata (noun). The word stems from basic forms of movement in martial arts, which are handed down from master to student over generations. Some common translations or definitions are:

- a way of doing something;
- a method or routine;
- a pattern;
- a standard form of movement;
- a predefined, or choreographed, sequence of movements

Digging deeper, there is a further definition and translation for the word- a way of keeping two things in alignment or synchronization with one another. It suggests that although conditions are always changing in unpredictable ways, an organization can have a method, a kata, for dealing with that.

As it was mentioned before through Makigami tool we have set actual condition and the next step will be setting target condition (from here starts Implementing Kata).

- A target condition is where we are going to be, NOT how we get there!
- It answers the question:

- How do we want this process operating pattern to be?
- What pattern do we want to have next?
- Where do we want to be next?

- A target condition allows you to be more scientific;
- A target condition enables team work, focus people attention and provide guidance;
- Must be clear, measurable and fixed.

Criteria's for a good TC:

- solvable
- no solution given
- usage of numbers and calculations as well (numbers leave the solution open!)

Example of Actual and target condition for vacation planning process in table

Table 2.1. Vacation planning process

Actual condition	Target condition
vacation process 0,07 hours	vacation process 0,04 hours

Makigami of vacation process showed us actual condition of the process, meaning that an employee spent 0,07 hour to proceed 1 vacation and give it for payment. The target condition set by process owner is 0,04 hour per vacation as a new challenge which in the moment he/she does not know how to reach. To realize target condition an employee needs to start daily experiments to reach desired condition.

Coaching KATA

Daily experiments need to be discussed daily with a coach while alone mentee (an employee who makes experiments over the process to reach set target condition) doesn’t see and thus can’t correct the errors in own practice.

To help the mentee become more proficient with the pattern of the Improvement Kata - to make it a habit – the Coach pays attention to the mentee current application of the

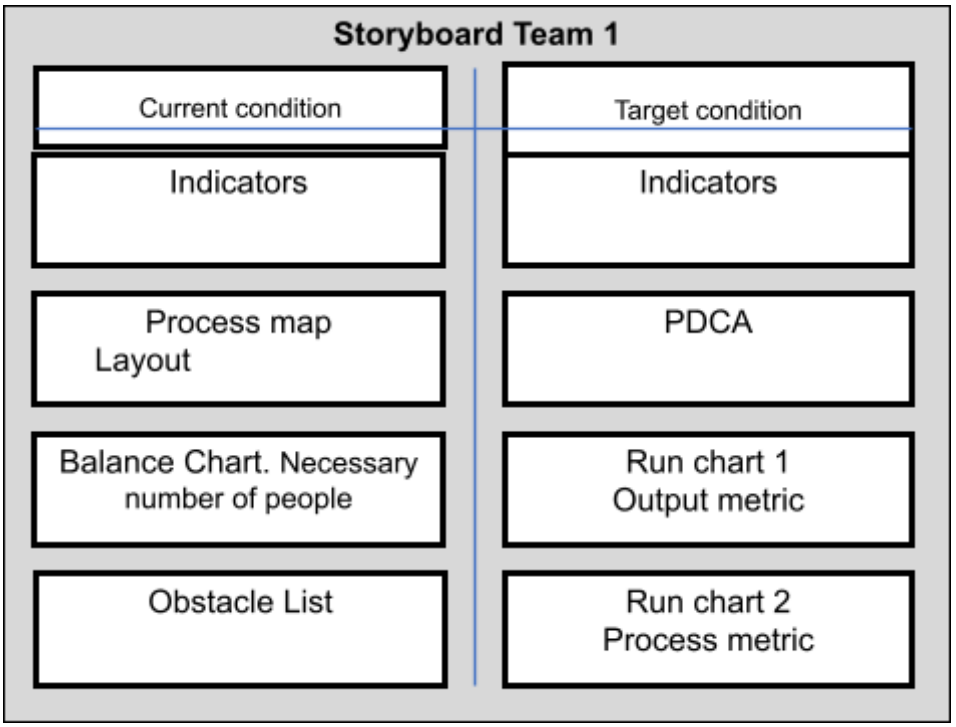
Improvement Kata and sets practice goals for improving specific aspects; to keep the mentee moving ahead in skill development.

Every day Coach met with my mentees for a Kata dialogue to discuss what have been tested for the process improvement.

The dialogue consists of 5 questions that are to be asked every day.

Daily dialogues are to be visualized on Kata Boards where we show:

- Actual condition
- Target conditions
- PDCA (for learnings)
- Indicators of the process
- Main obstacles
- Process metrix



Pic.2.4. Storyboard Team 1

What is important by each dialogue that Each Coaching cycles should lead to an experiment (a next step). Mentee needs to end the dialogue with intention to try something new for the process.

5 main questions to be asked by each KATA dialogue:

1. What is the target condition (value by date)?
   What is the value for the focus indicator?
2. What is the actual condition now?
   Metrics, What was your last step? Expectation? Learning?
   (Show me…)
3. What obstacles do you think preventing us from reaching the target condition?
   What causes do you see? Why?
   (How is the process actual running? How should it run? Show me…)
4. What is your next step (next Experiment in PDCA)?
   And what do you expect from this step? (What do you want to learn?)
   How will you do it exactly? How will you measure? What Forms?...
5. When can we go and see what we have learned?

Pic.2.5. Kata dialogue (all discussions are to be done near Kata Boards where all gathered information is visualized)

After 3 months of thorough work over the vacation planning procedure through Improvement and Coaching Kata we received the results 0,02 per 1 vacation (target condition was 0,04h). Results are shown in the table.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec
кількість відпусток	1261	6917	3668	1924	1183	3366	10200
Час до покращення на 1 відпустку	0,07	0,07	0,07	0,07	0,07	0,07	0,07
Час після покращення на 1 відпустку	0,02	0,02	0,02	0,02	0,02	0,02	0,02
Вартість години непрямого працівника	3,3	3,3	3,3	3,3	3,3	3,3	3,3
заощадження	208,065	1141,305	605,22	317,46	195,195	555,39	1683

CI	зміни в процесі
новий час	0,02 год
написання заяви на відпустку	зміна бланку заяви
сканування	скасували
сортування	скасували
набір справ з сейфів	скасували
перевірка залишку відпустки у П-2	скасували,автоматично стягує в наказ
запис у П-2	атоматично стягує з Navision у програму
розкладання справ у сейфі	скасували
формування наказу	змінили наказ

Pic.2.6. Vacation planning process

Vacation planning procedure was the first process analyzed using Kata approach. The path that we went through with mentee was difficult, full of impatience and desire to come back to the used routine, but first successful steps made us feel enthusiastic to go further. Afterwards additional processes were taken in scope and successfully implemented.

Following Toyota approach LEONI team is tending to make improvement and adaptation systematically, practicing its method on existing processes.

By participating in Kata trainings and afterwards practicing Improvement Kata more and more employees are being involved to apply new approach to almost every process and task.

2.2. Implementation Continuous Improvement projects at LEONI HR department.

After the successful implementation of the vacation process optimization project, there was a significant increase in projects for improving in HR department. The implemented projects had different targets which can be clustered as following:

- Digitalization projects;
- Optimization & Automatization projects;

- Employers brand development projects.
- Digitalization projects

1. Electronic information board project.

1.1. Background: At the enterprise the circulation of information is mainly organized with the help of information boards.

- Many visualization boards have a risks reducing the quality of preparation;
- Non-optimized process of submitting information is not efficient use of HR employees;
- Failure to submit online information to workers.

1.2. Current Condition:

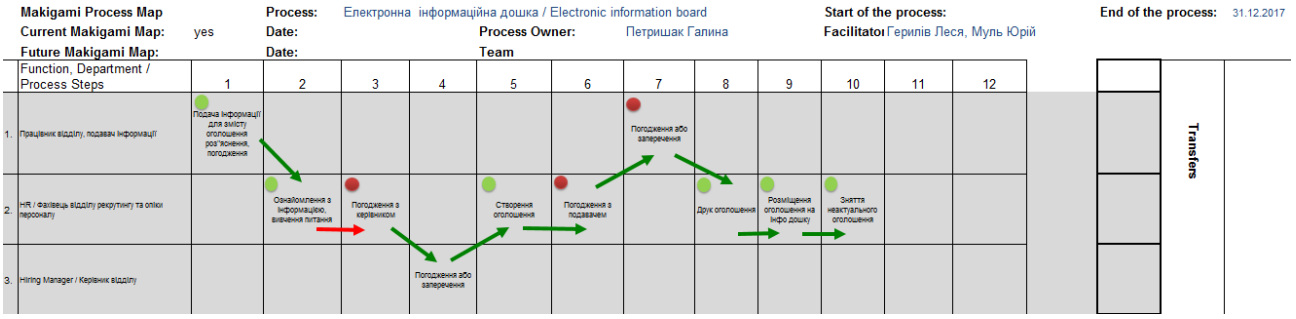
The circulation of information comes from hanging paper advertisements on inner magnetic info desks by Recruitment & Personnel Care department members.

1.3. Goal:

Employee informing with the help of innovative technologies including video and audio materials.

1.4. Analysis:

Using the method Makigami.



Pic.2.7. Makigami map for Electronic information board project

1.5. Implementation schedule:

Q1:

- Review and analysis of market innovation,
- Analysis estimates
- Description of the technical problem
- Documentation and order product

Q2:

- Analysis of the current state of the current process.
- make Makigami of current condition
- Analysis Software

Q3:

- Purchase of software and hardware
- The introduction and adoption of new software

Q4:

- Testing Sotware.

1.6. Result Report:

Due to this improvement, we were able to optimize the process of information exchange at the plant and transfered all ads into an online format, which gave positive results. The informational board has become more attractive. We can easily broadcast video and audio clips. Moreover, we save time for employees who manually hung and removed ads. We also save on paper and color toner for printing. Also, after the implementation of the project, we easily post presentations with the results of work for the quarter / year, post photos and videos with our employees.

Pic 2.8. Information board before the project

Pic 2.9. Information board after the project

2. Online application form project.

2.1. Background: In order to be visible for the company, candidates need to fill out a questionnaire. Common practice was filling out a paper form in the territory of the plant or submitting CVs on company email system or at company web page.

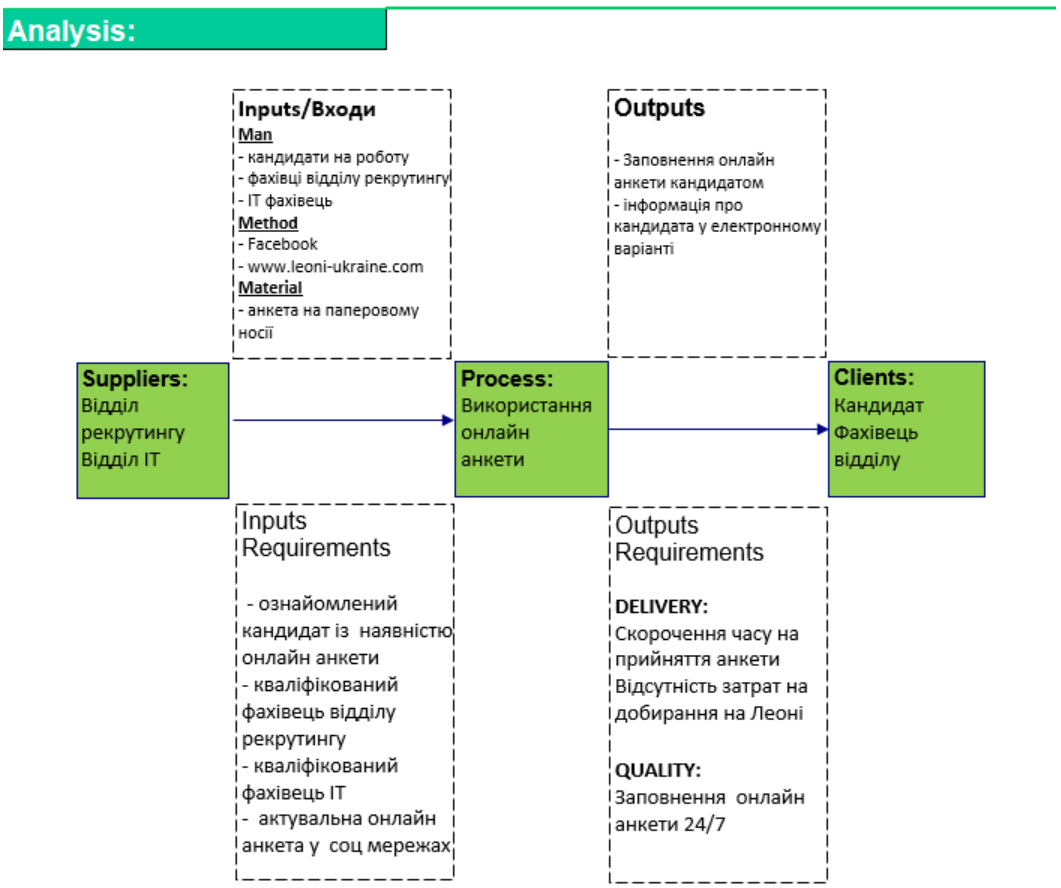
- To find lean way to apply for a job at LEONI;
- Reduce time for working out application forms (entering personal data in Taleo system automatically);
- Standartization of questionnaire as CV contains questions in chaotic order).

2.2. Current Condition:

- Taleo system allowes to apply to office position at www. Leoni-ukraine.com but it's impossible to get online application;
- Web page Facebook / without opportunities to send an e-mail.

2.3. Goal: Create visible online application form for candidates with an easy access.

2.4. Analysis: Using the method SIPOC- see photo below.



Pic.2.10. SIPOC analysis Online application form project

2.5. Implementation schedule:

Q1:

- technical tasks description;
- analysis of the Taleo application system /Create access to IT staff;
- analysis of Facebook's technical capabilities;
- development of a PDF file - appication forms;
- web form

Q2:

- get permission to attach an online questionnaire to www.leoni-ukraine;
- how to use application form at FB;

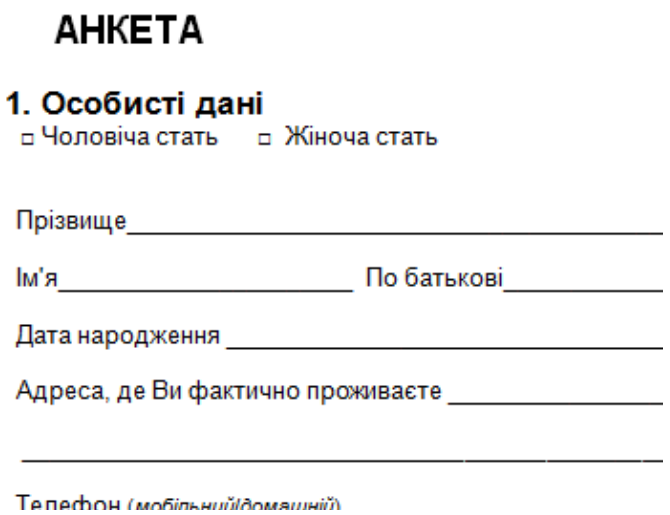
Q3:

- implementation of the application form;

Q4:

- widely spread of Online application form;
- Online application form advertisement.

2.6. Result Report: As a result of the introduction of the online questionnaire, we received significant improvements. Namely, they reduced the time of the employee of the Recruting department to fill in the questionnaire with the candidate and enter it manually in the database. Moreover, we started to receive standard applications more often, because of posting the application forms in free access at Facebook. Saving paper and toner for printing the form is also significant.



АНКЕТА

1. Особисті дані

☐ Чоловіча стать ☐ Жіноча стать

Прізвище_____

Ім'я_____ По батькові_____

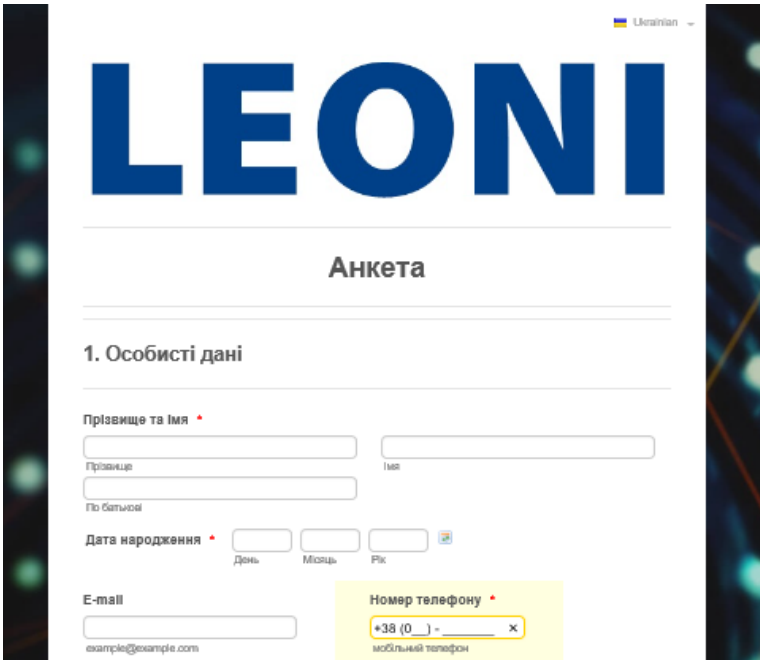
Дата народження _____

Адреса, де Ви фактично проживаєте _____

_____

Телефон (мобільний/домашній)

Pic. 2.11. Photo before the realization of the Online application form project



LEONI

Анкета

1. Особисті дані

Прізвище та Імя *

Прізвище

Імя

По батькові

Дата народження *

День

Місяць

Рік

E-mail

example@example.com

Номер телефону *

+38 (0__) - _____

мобільний телефон

Pic. 2.12. Photo after the realization of the Online application form project

3. Self-service portal (infoterminal) for employees (Routes Ordering)

3.1. Background: One of the advantages of working at the company is company transfer. In order to properly organize the employees transfering, it is necessary to provide information to the transport department in a certain way.

- Adding the correct data to order route vehicles carrying the risk of errors.
- Introduction of innovative technologies for independent employee making the correct data to the route ordering vehicles.
- Not optimized time HR employee to put the necessary data for custom route vehicles.

3.2. Current Condition:

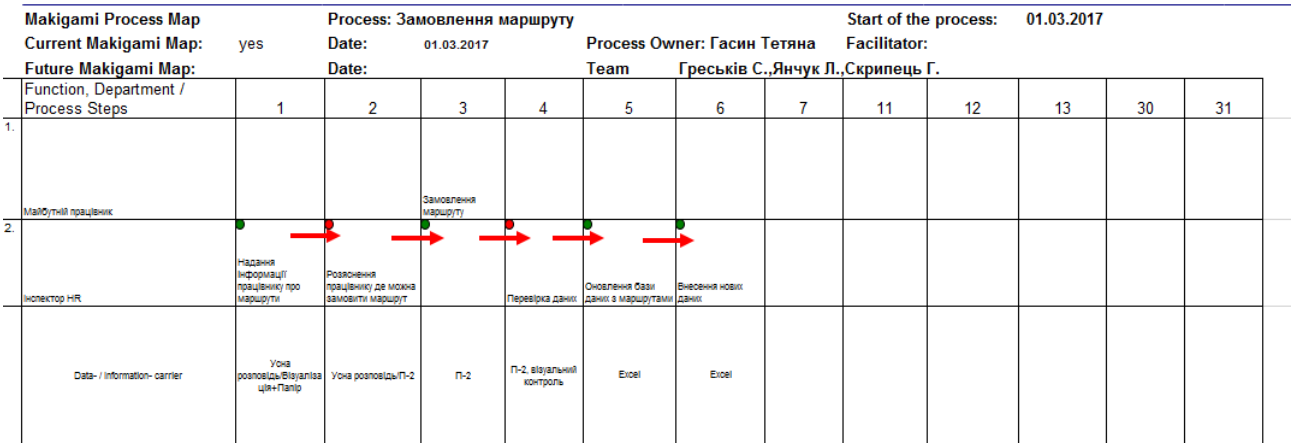
During the hiring process a newcomer gives the information about the his\her route - the place, where he\she points the bus stop (to LEONI). HR Specialist works out this information, updates its into special data base for Vehicle department manually.

3.3. Goal:

Employee will order appropriate route in infoterminal without HR by themselves.

3.4. Analysis:

Using the method Makigami.



Pic.2.13. Makigami map for Self-service project for employees (Routes Ordering)

3.5. Implementation schedule:

Q1:

- Overview of technical specifications for IT

Q2:

- Make Makigami of current condition
- The submission and approval of technical specifications for IT

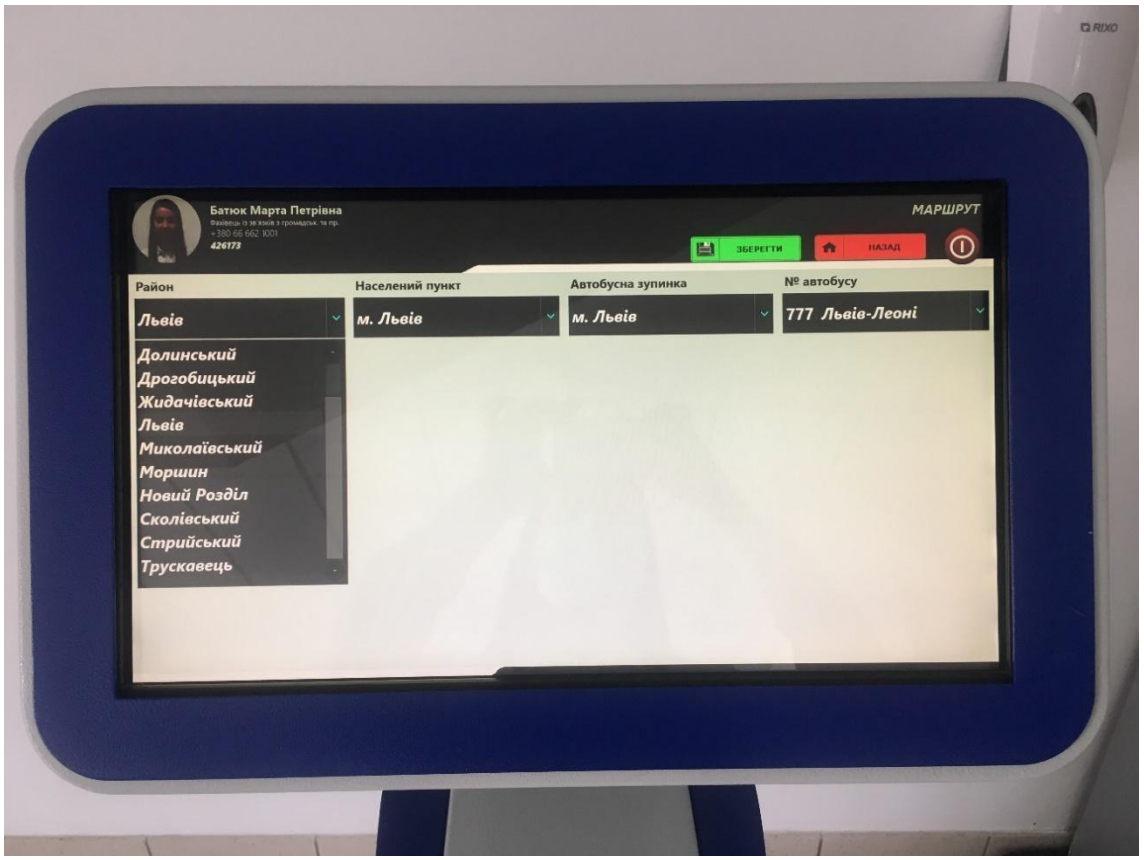
Q3:

- Creating an information catalog transport routes.
- Create and additional functions for checking statistic directory transport routes.

Q4:

- Making the correct route data on employees in infoterminal.
- Testing the developed routes in the terminal.

3.6. Result Report: As a result of the project, we were able to save a significant part of the HR employee's time and transfer the process directly to the transport department without involving additional HR employees. Moreover, we integrated this process into a self-service terminal for employees and continued to implement new services into self service portal. Each employee has their personal access number and password and can easily change their personal settings.



Pic 2.14. Self service portal / Infoterminal (Routes Ordering sheet)

- Optimization & Automatization projects:

1. Basic training optimization project (Banding/taping procedure).

1.1. Background:

- Old equipment at the Banding training area
- Waste of time spent on visualization

1.2. Current Condition:

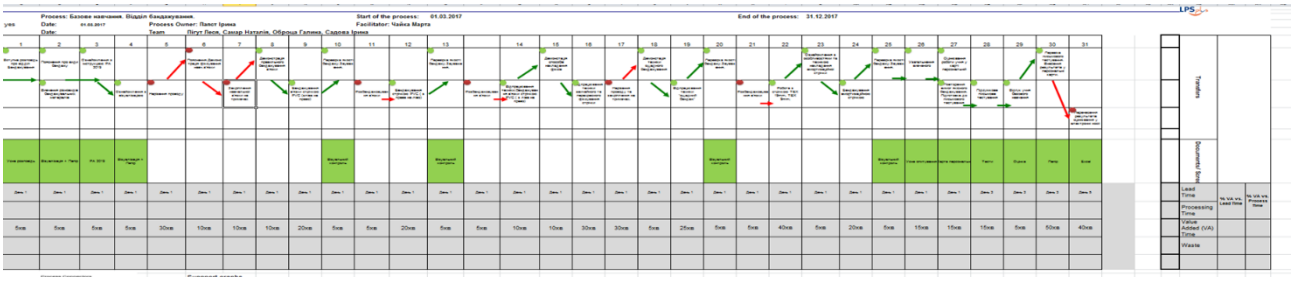
Old equipment at the Banding training area, inability to modern conditions of the production. Waste of time spent on visualization and gaining the material for the training.

1.3. Goal:

To improve the technique of banding on the basic training area, to teach more learners at the same time, to improve quality through new comfortable working place, similarity to the production , better visualization.

1.4. Analysis:

Using the method Makigami.



Pic. 2.15. Makigami map for Basic training optimization project (Banding/taping procedure)

1.5. Implementation schedule:

Q1:

- clarify the possibility to change old banding boards to new work places;
- clarify the possibility of implementation new board with laymann;
- to measure the process.

Q2:

- make Makigami of current condition

- make presentation of current condition for Banding area

- make presentation of future condition for Banding area

Q3:

- to gather the ideas with HR & PPE dpt

- Make new scheme for banding board / table

Q4:

- to make new working place and to test it

1.6. Result Report: As a result of the implementation of this project, we have optimized the work of the basic training department, created better conditions for training new employees. We also reduced the time for training new employees. The new workplace is comfortable and well illuminated. The training board meets plant standards. Two versions of the board allow you to diversify and improve the learning process The convenient way of fastening of a wire allows to save a banding tape and time. Each place is provided with the necessary visualization and training instructions.

Pic 2.16. Photo before the realization of the Basic training optimization project (Banding/taping procedure)

Pic 2.17. Photo after the realization of the Basic training optimization project (Banding/taping procedure)

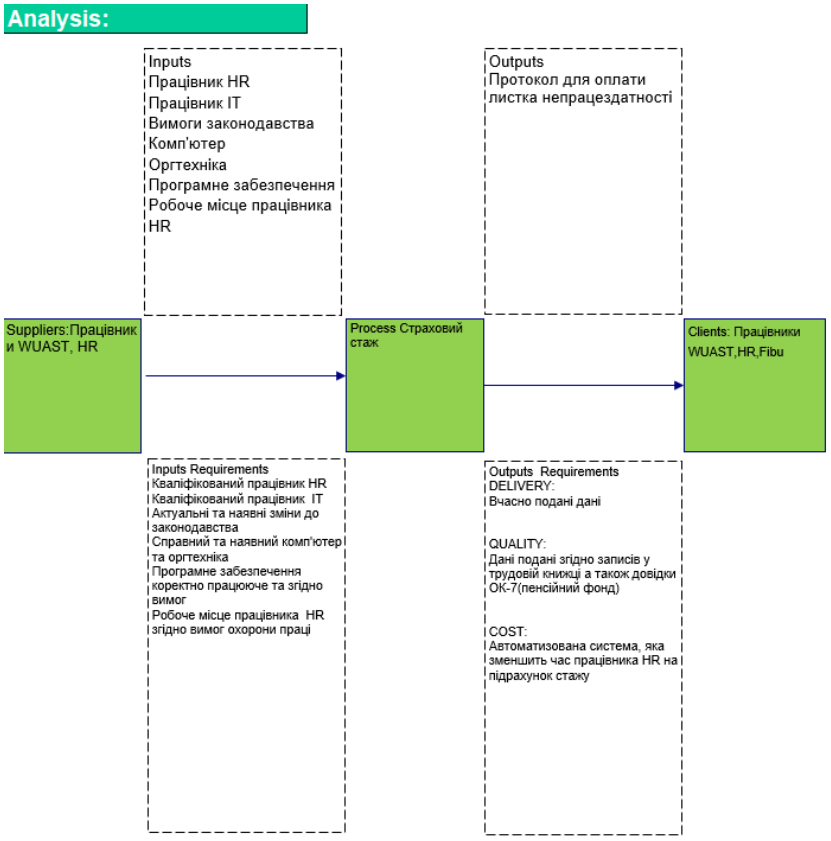
2. HR administrative work optimization project (Automatization of Job experience calculation for sick-leaves lists payment).

2.1. Background: The length of service of employees to pay for a medical certificate is calculated on a regular basis for all new employees manually and from several sources. There is a risk of errors, as a result - penalties from labour inspection.

2.2. Current Condition: HR specialist calculates work experience for new employee to determine the level of disability benefits before LEONI, work experience at LEONI, fills out a certificate of incapacity for work and a protocol for payment for sick leave.

2.3. Goal: Creation of a single system that will calculate the work experience of the employee automatically at the time of disability and generate data in the protocol. The number of errors will also decrease.

2.4. Analysis: Using the method SIPOC- see photo below.



Pic.2.18. SIPOC analysis HR administrative work optimization project (Autamatization of Job experience calculation for sick-leaves lists payment)

2.5. Implementation schedule:

Q1:

- discussion of the technical task for IT;

Q2:

- approval of terms of reference for IT;

Q3:

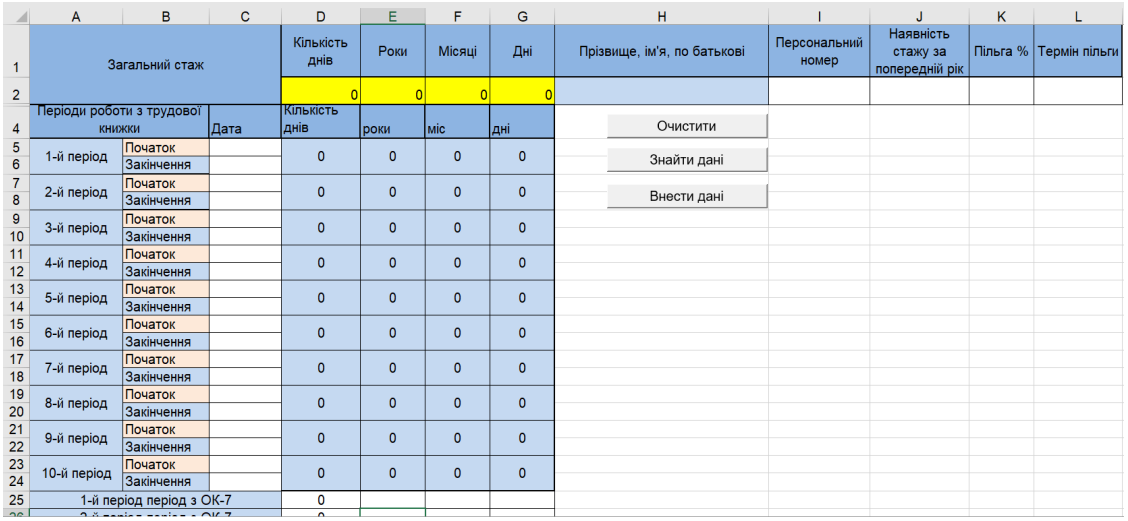
- Modification of the existing employee work experience base for the new system, which will calculate the employee's experience;
- Development of a system that will calculate the work experience of the employee;

Q4:

- Testing and implementation of a system that will calculate the length of service of the employee

2.6. Result Report: There was created a unified system, which automatically calculate employee's work experience at the time of loss of labour capacity and generate data in the protocol. Time for processing this information was significantly reduced after implementation of the system. The total time spent was 180 hours per year, means we reduced of non-value add time of HR department employees. Also, the number of mistakes was reduced.

Pic.2.19. Photo before the realization of the HR administrative work optimization project



	A	B	C	D	E	F	G	H	I	J	K	L
1	Загальний стаж			Кількість днів	Роки	Місяці	Дні	Прізвище, ім'я, по батькові	Персональний номер	Наявність стажу за попередній рік	Пільга %	Термін пільги
2				0	0	0	0					
4	Періоди роботи з трудової книжки		Дата	Кількість днів	роки	міс	дні	Очистити				
5	1-й період	Початок		0	0	0	0	Знайти дані				
6		Закінчення										
7	2-й період	Початок		0	0	0	0	Внести дані				
8		Закінчення										
9	3-й період	Початок		0	0	0	0					
10		Закінчення										
11	4-й період	Початок		0	0	0	0					
12		Закінчення										
13	5-й період	Початок		0	0	0	0					
14		Закінчення										
15	6-й період	Початок		0	0	0	0					
16		Закінчення										
17	7-й період	Початок		0	0	0	0					
18		Закінчення										
19	8-й період	Початок		0	0	0	0					
20		Закінчення										
21	9-й період	Початок		0	0	0	0					
22		Закінчення										
23	10-й період	Початок		0	0	0	0					
24		Закінчення										
25	1-й період період з ОК-7			0								

Pic.2.20. Photo after the realization of the HR administrative work optimization project

3. Employees qualification process project.

3.1. Background: Verifying the knowledge and qualification level of production employees according to the work they do is the main purpose of the qualification process. The qualification processes main focus is production because the employees who carry out activities depend on production volumes and are assigned directly to the products based on product type and their ability to deal with them. The results of this assessment award qualifications to employees, and determine whether employees require requalification if their qualification has expired.

- Shift leaders' manual work for filling data concerning qualifications of every employee into form of the matrix of qualification;
- QM workers' manual work;
- manual work of training department staff to enter data into SAP;
- costs of printing documentation;
- spending time on passing the documents.

3.2. Current Condition:

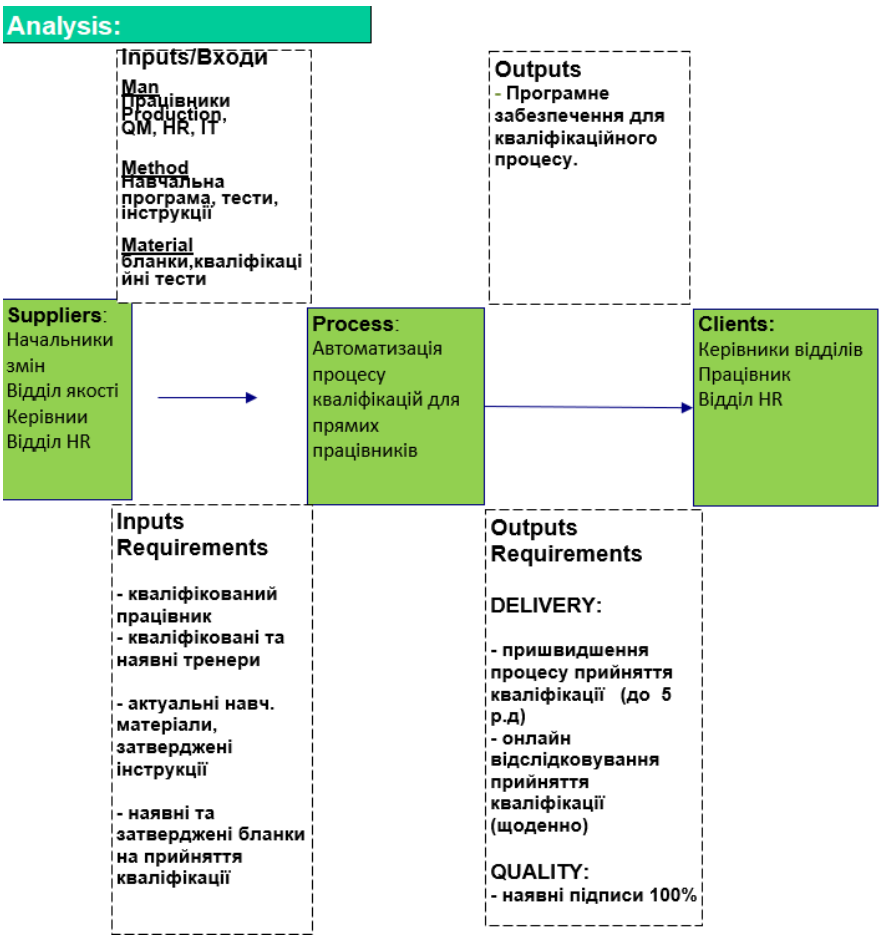
- Submission by the Supervisors of changes to the order form for assignment / reassignment / cancellation of qualifications to employees and transfer in paper form to the QM department;

- processing of orders by QM employees and transfer (in paper form) to the HR department;
- HR processing of orders, entering into the SAP system;
- Processing and printing of command matrices every month (Production + HR department);
- Save all orders and matrices in paper form.

3.3. Goal: auotomatisation of orders for qualifications and matrix for direct employees:

- automating the system of qualifications' ordering for direct employees;
- no printing costs;
- speeding up the process of getting the information;
- avoiding mistakes and making the employees' identification process easier;
- faster search of data in orders.

3.4. Analysis: Using the method SIPOC- see photo below.



Pic. 2.21. SIPOC analysis Qualification process project

3.5. Implementation schedule:

Q1:

- Discussion of IT technical work;

Q2:

- Approval of IT technical work;

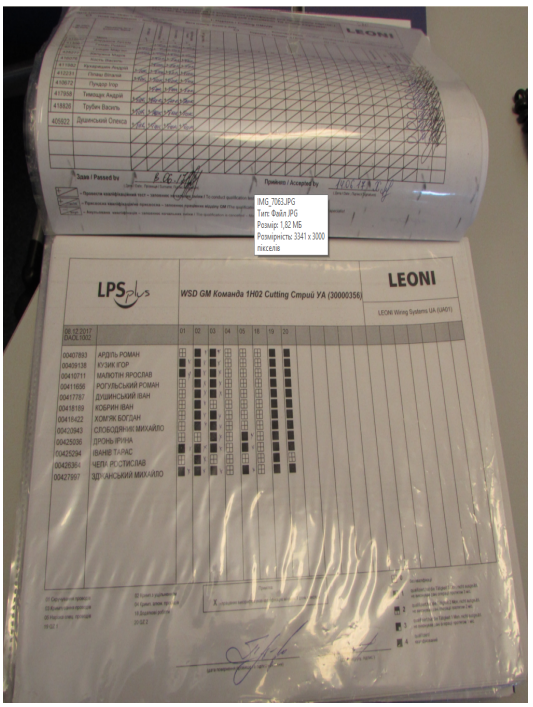
Q3:

- Development of a program that automates the assignment / reassignment / cancellation of qualifications and matrix;

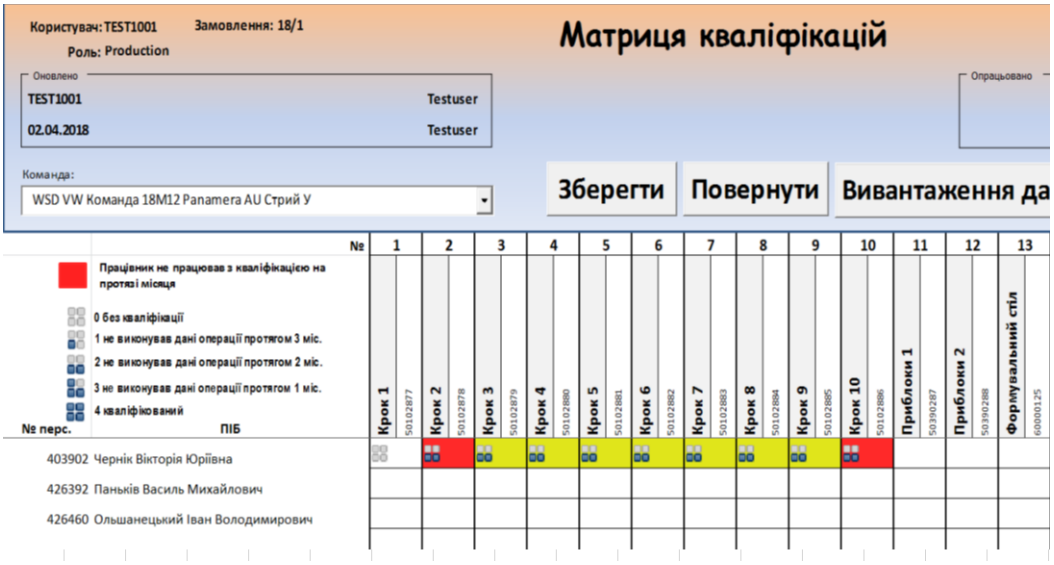
Q4:

- Testing and induction of the program.

3.6. Result Report: By implementing the automatization of the qualification process for production employees project, we now have a single source which effectively collects, manages, stores and distributes all employees qualification data. The main objectives of this project have been fulfilled as we now avoid the unnecessary and time-consuming manual work for employees in different departments, and the duplication of work and the possibility of errors has been eliminated. The stakeholders have submitted their feedback and acknowledge that there are no deliverables which were missed or omitted for this project.



Pic. 2.22. Photo before the realization of the Qualification process project



Pic. 2.23. Photo after the realization of the Qualification process project

4.Trainings scanning project.

4.1. Background: We develop our employees and try to keep them updated, motivated and skilled. That is why training activities are conducted every day. LEONI Ukraine is a huge enterprise where almost 5000 employees work in order to fulfill all the automotive industry requirements and meet the manufacturing expectations.

- employees' manual work during training attendance registration;
- registration of trainings from attendance form into SAP system takes a lot of time and is made manually;
- time wastes on recognition of participants during filling the data manually;
- costs of printing the employees' registration forms.

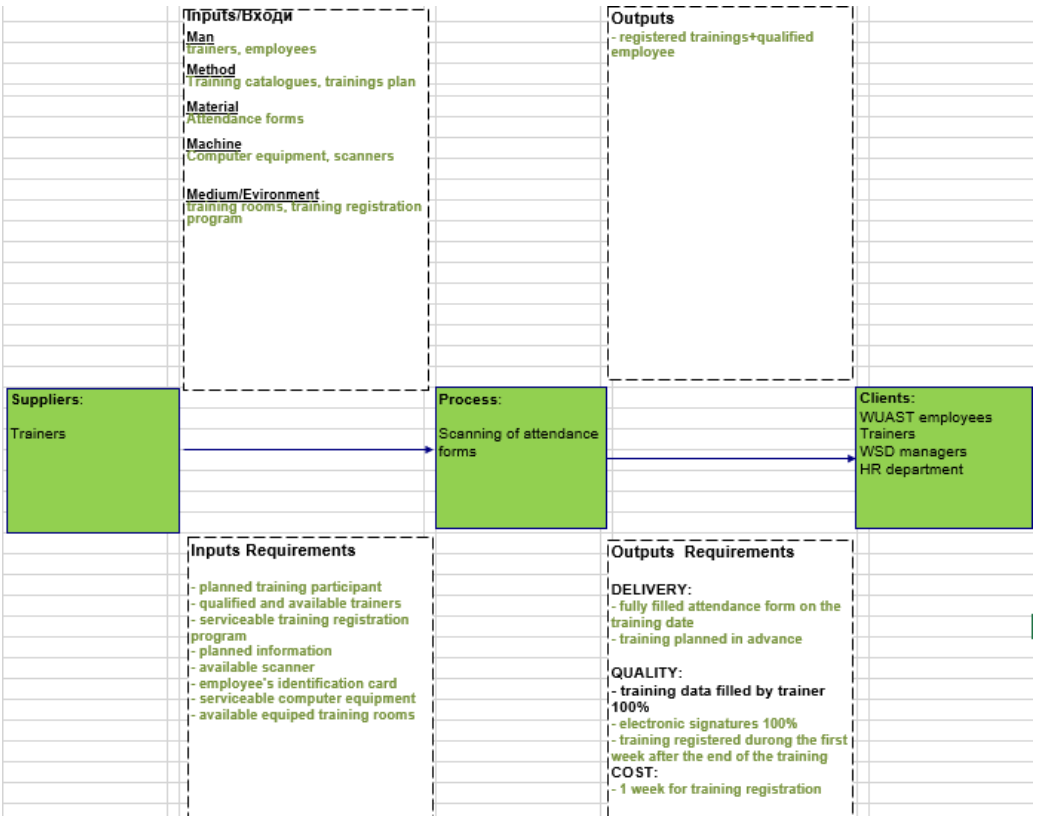
4.2. Current Condition:

- attendance form printing;
- clarification of participants' personal data;
- identification of training title according to Training Catalogue;
- registration of trainings from attendance form into SAP system is made manually;
- report forming from SAP every month.

4.3. Goal: Automate the registration of trainings for participants and reduce time to submit data to the SAP system for staff training specialists:

- registration of trainings electronically that will help to reduce time on submitting data into SAP;
- no printing costs;
- actual information about held trainings;
- avoiding mistakes and making the participants' identification process easier;
- faster search of trainings information;
- creation of extra fields in registration system, that are non-available in SAP;
- opportunity to forming reports with additional fields, that are non-available in SAP.

4.4. Analysis: Using the method SIPOC- see photo below.



Pic. 2.24. SIPOC analysis Trainings scanning project

4.5. Implementation schedule:

Q1:

- discussion of IT technical work;

Q2:

- creation of training catalogue. Approval of IT technical work;

Q3:

- development of program thar automates the registartion process of employees, trainings and reports forming;

Q4:

- testing and induction of the program.

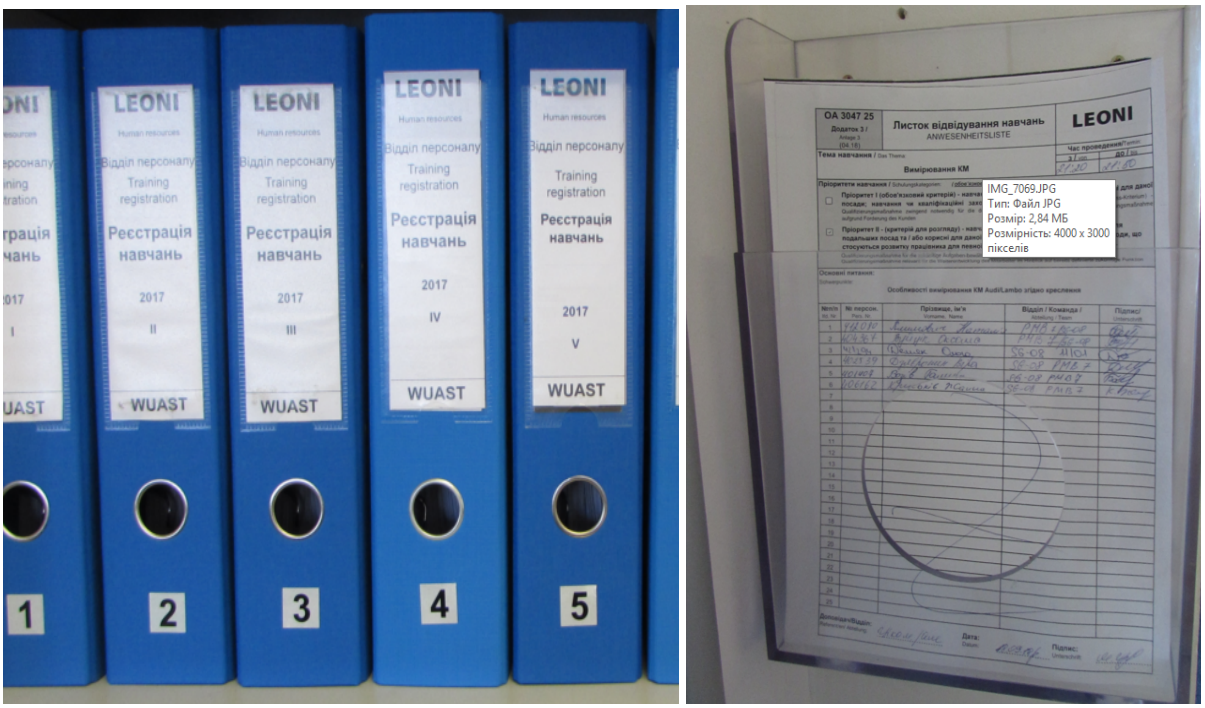
4.6. Result Report: Due to this large project it helped us to achieve our main goal and all of the intermediate goals. We automized the registration of trainings for participants and reduced time to submit data to the SAP system for staff training specialists.

Additonally all employyes data can be copied and transferred to SAP using one copy-paste operation. This procedure also reduces the number of mistakes and inappropriate data.

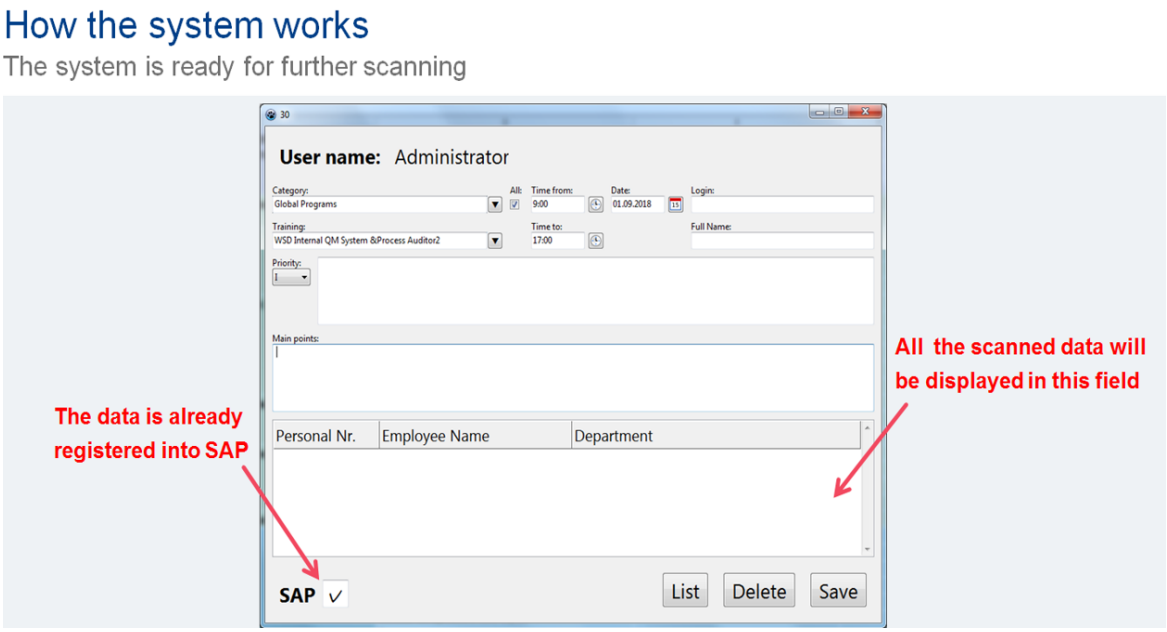
Moreover, all data will be saved in the program that gives the advantage to generate the expanded report. The trainings can be searched by their titles, by personal numbers of participants, by trainers, departments etc.

Besides, HR scan program saves working time for participants, trainers and staff training specialists. It's easier to register trainings, to edit them, to find them and to transfer the training data to SAP.

Finally, the program provides accurate identification of training titles according to Training Catalogue. It means that trainers can choose only valid titles without modifying them in case if they forget the exact title. It is easier to find the training both in the program and in SAP because the titles coincide and have the same training code.



Pic.2.25. Photo before the realization of the Trainings scanning project



Pic.2.26. Photo after the realization of the Trainings scanning project

5. Self-service portal (infoterminal) for employees (Day off application sheet)

5.1. Background: Due to the large number of excused abscence of employees of the enterprise, HR specialists spend a lot of working time on putting data in NAVISION.

5.2. Current Condition: The cost of working time by employees of working time, namely:

- removal of filled paper of excused abscence from the reception and production is - 49.5 hours / year
- sorting of of excused abscence by dates and departments is - 29 hours / year
- entry of of excused abscence in the NAVISION program is - 550 hours / year

5.3. Goal: Avoid picking up, sorting and manually input into the system

5.4. Analysis: Using method Makigami

5.5. Implementation schedule:

Q1:

- Defining the functionality of the program;
- Creating a technical task with the IT department and the chief accountant;

Q2:

- Approval of the technical task;
- Software development based on the created technical task;
- Writing a CRF to InnoWare "Importing data of excused abscence to Navision";

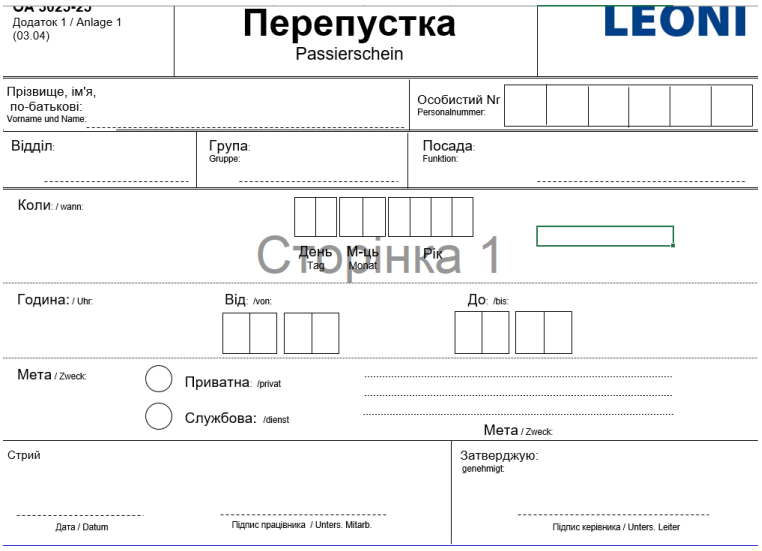
Q3:

- Software development based on the created technical task;
- Testing the program in the infoteminals;
- Testing the import of passes in Navision;
- Conducting training for shift managers / departments on accepting employee passes;
- Informing employees about changes in the procedure of passes.

Q4:

- Arrangement of info terminals on production premises;
- Full implementation of this project.

5.6. Result Report: as a result of the implementation of this project, we have fully automated the process of submitting, signing and processing an internal document - excused abscence “perepustka”. In this case, we were able to optimize the number of HR employees in the time registration department.


Додаток 1 / Anlage 1
(03.04)

Перепустка
Passierschein

LEONI

Прізвище, ім'я, по-батькові:
Vorname und Name:

Особистий Nr
Personalnummer:

Відділ:

Група:
Gruppe:

Посада:
Funktion:

Коли: / wann:

Стрінка 1

День Тag М-ць Monat Рік

Година: / Uhr:

Від: /von:

До: /bis:

Мета / Zweck:

Приватна: /privat

Службова: /dienst

Мета / Zweck:

Стрий

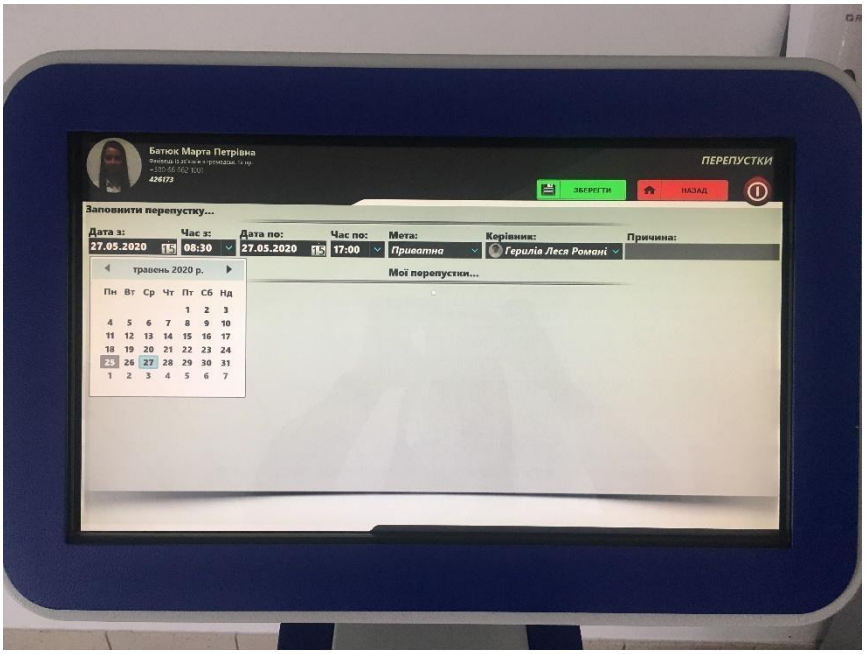
Дата / Datum

Підпис працівника / Unters. Mitarb.

Затверджую:
genehmigt:

Підпис керівника / Unters. Leiter

Pic. 2.27. Photo before the realization of the project



Pic. 2.28. Photo after the realization of the project

- Employers brand development project:

1. Practical qualification of NU LP students (dual education approach)

1.1. Background:

- Shortage of qualified personnel for engineering departments;
- Not appropriate level of students' knowledges for work at LEONI;
- Reducing time for providing of new employees.

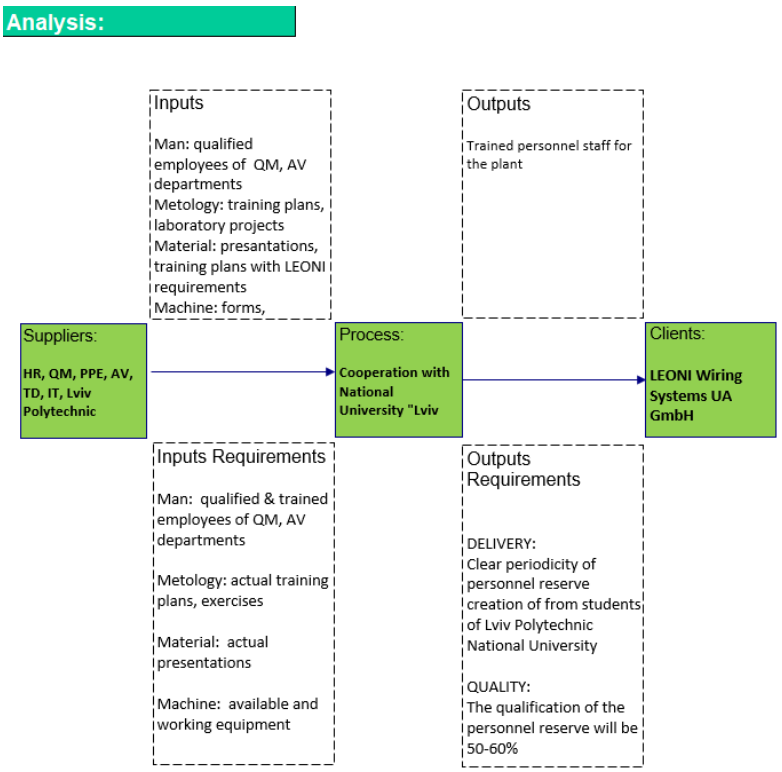
1.2. Current Condition:

- Candidates are being searched as per demand either externally or internal promotion; (searches are made only during company presentations at Career Fairs and with the help of Internet resources);
- Not appropriate level of students' knowledges for work at LEONI (potential employees);
- Insufficient level of information about the company in general

1.3. Goal:

- Making of personnel reserve/staff among the students;
- Creating the LEONI laboratory in LP NU. Technical providing for students by visual, control-measuring equipment for plant and university needs;
- Conduction of the theoretical and practical lessons based on business cases by LEONI appropriate specialists (AV, QM);
- Permanent visual advertising about LEONI on information boards and screens of LP;
- Promotion of LEONI brand among students.

1.4. Analysis: Using the method SIPOC- see photo below.



Pic. 2.29. Practice qualification of NU LP students (dual education approach)

1.5. Implementation schedule:

Q1:

- Beginnig of cooperation with NU LP at the documentary level (contract);

- Consideration of possibility to pass the students practice on LEONI.

Q2:

- Choosing a room for laboratory;
- Defind the list of necessary equipment for laboratory;
- The beginning of the arrangement of the laboratory.

Q3:

- Launch of LEONI laboratory in NU LP;
- Practical projects for students of NU LP on the basis of LEONI laboratory.

Q4:

- Participation of LEONI specialists in preparing students for future employment (projects, course / thesis).

1.6. Result Report: As a result of the project implementation we developed and implemented effective training and development programs for future professionals on the basis of the university in lectures with teachers. Importantly, we significantly save time on the selection of engineers for office vacancies. Also, as a result of the introduction of training for our needs, we have reduced the time for the introduction of the employee from LU NP from 6 months to 3 months. We have also set up our own LEONI room at the university, which also serves to improve the company's external image among students.

Pic. 2.30. Photo of the laboratory in NU LP

2.3. Analysis of project stakeholders.

A stakeholder is anyone who has a “stake” in the success of a business – a person who can be affected by, or affect, the operations of the projects.

For a business to grow, it needs to keep innovating, doing new things, developing new projects, and attracting appropriate stakeholders. To start on a new project – whether a new approach, or a new operating method – the first after having an idea is determining who the CI project’s stakeholders are, understanding the role of different others stakeholders, such as Head of LPS, for example, or IT specialist, and identifying goals and expectations. Anyone who has a vested interest in the successful performance of the project can be considered a stakeholder, and depending on the needs, the company must take into consideration how its activities affect in the future.

Stakeholders of our projects and their impacts into the projects’ implementation:

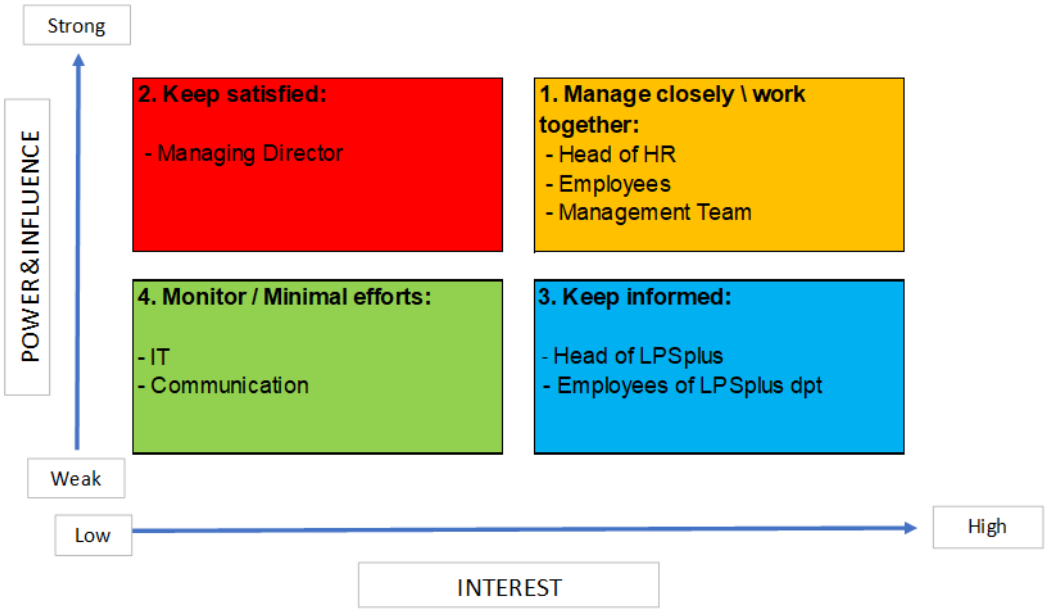
- Managing Director LEONI UA
- Management team
- Head of HR
- Head of LPSplus department (LPS = LEONI Productive System)
- HR Leaders
- HR employees
- Employees of different departments
- Employees of LPSplus dpt
- IT
- Communication

They are our internal stakeholders and have different interests, power and influence during the projects’ implementation.

The participation of stakeholders is shown in the pic. 2.31.

The two central variables are plotted on a chart with the x-axis interest - low and high impact (Interest is the size of the overlap between the stakeholder’s and the project’s goals) and the y-axis being power and influence – strong and weak impact

(Power is the ability of the stakeholder to stop or change the project). This chart is a solid analysis of the stakeholders' interaction with the project.



Pic. 2.31. Stakeholder Matrix

Strong power and influence, highly interested people (1. Manage closely \ work together):

- Head of HR
- Employees
- Management team

These stakeholders are fully engaged and make the greatest efforts. Head of HR is one of the drivers of the projects. The main interests for us are: management team's readiness to take challenges, Managing Director's / Management Team's / HR employees' support, indirects reduction process, reorganization, employees engagement, development of HiPo candidates, Talent Management Project implement.

For Management team is important to receive a new challenge, learn new management approach

Strong power and influence, less interested people (2. Keep satisfied):

- Managing Director

We had to put enough work in with Managing Director to keep him satisfied.

What is important for this stakeholder? - He has an interest to develop management team to a new level of managing employees (from manager to coacher), prepare a company to a new challenge, new clients \ customers attraction \ involvement, implementation of new projects, increasing effectiveness, costs saving, company image.

Weak power and influence, highly interested people (3. Keep informed):

- Head of LPS department
- LPS department employees

Colleagues from this department are very helpful with the details of our projects and are interested in projects implementation, processes optimization and standardization, targets achievement. We inform them permanently.

Weak power and influence, low/less interested people (4. Monitor\minimal efforts):

- IT
- Communication

For this category of stakeholder important is information flow. We monitor these people regularly.

Making the stakeholder matrix we identified the needs and expectations of major interests inside and outside the projects' environment, their benefits and risks. We tried to understand the attributes, interrelationships, interfaces among and between projects advocates and opponents in strategically planning of our projects.

The main questions were asked to our stakeholders:

- How much does the situation impact them? (low, medium or high impact)
- How much influence do they have over the situation? (low, medium or high impact)
- What is important to the Stakeholder?
- How could the stakeholder block or obstruct the situation?
- How could the stakeholder contribute to the situation?
- Strategy for engaging the stakeholder

More detailed stakeholder's matrix see in Appendix A.

This matrix helps us to map out stakeholders and their relation to different issues. It generates insights on the importance and influence of each stakeholder. With this information we could develop specific approach and strategy for the identified stakeholders to appropriate project. The importance is in giving the priority to satisfying the needs and interests of each stakeholder. The influence is in power of stakeholder that must facilitate or impede the achievement of an activity's objective. The extend to which the stakeholder can persuade or coerce into making decisions and following a certain course on action.

The next importance of projects implementation is an effective communication with our projects' stakeholders. It is something that we could not overlooked. There were different waves of managing the communication with different level of stakeholders. So, for example, stakeholders from the group with strong power and influence, highly interested people (1. Manage closely \ work together): Head of HR, Employees and Management team its better to have face-to-face communication. And stakeholders from weak power and influence, low/less interested people (4. Monitor\minimal efforts): IT and Communication – did not need the same attention and were updated via email and intranet.

From our experience, communication works better on a regular based meeting, feedback, discussions with appropriate stakeholders.

Project success depends on the importance of key assumptions and risks. In relation to stakeholders, risks are appearing when there are conflicting needs and expectations. For example, the interests of Managing Director may not be in line with the objectives of the project (in our case project – Information board) and could block a project's positive progression. To bring to light key risks, we needed to clarify unspecified stakeholder roles and responsibilities, to use unfulfilled needs and expectations, and double check the plausibility of assumption made. In our practice also we faced with stakeholders, that manipulated people by different techniques and tried to stop the project (Project – Qualification Process).

Each risk affects the project differently. From this perspective, we must focus on the project management that cause the biggest losses and deal with them first.

We classified our risks into 2 groups:

- Financial
- Strategical

The potential risks of our projects from financial group are:

- Overestimated target (ratio direct\indirect)
- Limited IT resources
- Force majeure

These risks are with high influence and can be caused by the next reasons:

- Overestimated target (ratio direct\indirect) – high level of employees' fluctuation or customers' orders downsizing
- Limited IT resources - Corporate IT structure, lack of appropriate IT specialists
- Force majeure - Covid-19

To avoid the negative influence of each of these mentioned risks we have to be prepared and try to minimize the high level of threats. We worked out the countermeasures with necessary actions: prepared detailed milestone for each reduction step, external resources involvement did, additional headcount reduction program work out.

The strategical potential risk we see that high potentials, key persons or project leader may leave the company for the competitors. In making decisions how to react in such situations we took into consideration the involvement and level of capacity of our high potentials, key persons and project leader and created the salary structure with additional bonuses' system and prepared the motivational program.

Table 2.2. Risks assessment LEONI UA

#	Risk Classification	Potential Risk	Influence L, M, H	Reason	Countermeasures (Actions) if required
1	Financial	Over estimated target (ratio direct\indirect)	H	Fluctuation of employees Customer orders downsizing	Prepare detailed milestone for each reduction step
2	Strategic	Fluctuation of high potentials\key persons\project leader	H	High Potentials\key persons\project leader may leave the company for the competitors	High Potentials\key persons\project leader involvement (+ additional bonuses' system creation) Prepare the motivational program
3	Financial	Limited IT resources	H	Corporate IT structure Lack of appropriate IT specialists	External resources involvement
4	Financial	Force majeure	H	CoVid-19	Additional Headcount reduction program

Conclusions to chapter 2.

The second section is devoted to practical implementation TOYOTA methods in HR department at LEONI Ukraine. Here we have described in detail all the projects of continuous improvement, which were applied in HR department from 2017 to 2020. For each project is defined background – reason for implementation, past and current condition, goals of the project, method of analysis, implementation schedule, result report with photos.

The section also identifies the stakeholders of LEONI HR projects and their impacts into the projects' implementation. A stakeholder is anyone who has a "stake" in the success of a business – a person who can be affected by, or affect, the operations of the projects.

CHAPTER 3

COST SAVINGS CALCULATION PER CI PROJECTS. OVERALL CONCLUSIONS

3.1. Cost savings calculations.

Financial savings of the realized projects are shown in the tables belows. In the majority of the cases the savings were reached through optimization of non value adding employees activities within process that were tracked in min/hours per year and recalculated into Euro value, in some cases savings were reached also by optimization or even non further usage of some materials, also recalculated into Euro value.

Online application form project

Total savings per year = 108 €

Past	Time
Recruiter's time to support and provide information to the candidate	10 min
Recruiter time to enter data into the program (Taleo database)	2 min

Present	Time
Recruiter's time to support and provide information to the candidate	0 min
Recruiter time to enter data into the program (Taleo database)	2 min

Type of Platform	Posted period	Candidates
Online Application Form	6 months	653
TALEO/www.leoni.com	6 months	20

Positive changes:

- Completion of the appl.form by the candidate 24/7;
- Candidate data is stored in the electronic version;
- Increase in the number of appl.forms received during the same period;
- No costs for selecting a candidate to Leoni.

2700 * 2 min = 5400 min
5400 min / 60 = 90 hours per year
90 hours per year* 2.4 € = 216EUR

As far as paper form of applications still will be used it will be possible to save the half of the sum.
90hours per year*2.4 EUR=216 EUR/2=108 EUR/year

*General quantity of application = 2700 per year
*Cost of an office worker's hour (2018)= 2.4 €

Pic. 3.1. Online application form project calculations

Self-service project for employees (Routes Ordering)

Total savings per year = 107.4 €

Process	Average value
Employment	1037 number of new employees
Assistance for new employee when entering route data into the identity card	20 s
Updating the database for transport department	162 s
Total	182 seconds
Total	0,05 hour
Time before improving / year	52,4 hour
Time after improving / year	5,8 hour
Difference	46,7 hour
Cost of an office worker's hour	2,3 € (2017)
Time after improving per 1 new employee	0,0 hour
Total savings / year (for office employee)	107,4 €

Positive changes:

- Reducing the time for processing data by HR department;
- Always actual database;
- Standardized routes catalogue;
- Self-service/employee personally secures the route for himself;
- Possibility for use in other related programs.

Pic.3.2. Self-service project calculations

Basic training optimization project (Banding/taping procedure)

Total savings per year = 126 €

Tape for bandage	Past 	Present 
1 holder	1 м	0,1 м
1 training bundle	2 м	0,6 м
1 student	12 м	4,2 м
2016 (1663 students)	19 956 м	6985 м
Savings:		**12 971м**

Time Spent on fastening the bundle	Past 	Present 
1 holder	20 s	6 s
1 training bundle	60 s	36 s
1 student	360 s	252 s
2016 (1663 students)	598 680 s	419 076 s
Savings:		**179 604 s**

Average speed bandaging basic training graduate	Past 	Present 
Full bandage	280 s	263 s
Saving bandage	132 s	120 s
Bandage with a shock-absorbing tape	318 s	310 s

The cost of one roll of tape (33м) - 0,3206 €.

12 971/33=393 rolls

393*0,3206 = **126 €/year**

179 604 s = **49,89 год**

49,89 hours*1,88 € = **93,79 €/year**

There were noticed tendency to improve the speed of the bandage among graduates of basic education

*Cost of direct worker's hour (2017)= 1.88 €

Pic.3.3. Basic training optimization project calculations

HR administrative work optimization project
(Automatization of Job experience calculation for sick-leaves lists payment)

Total savings per year = 293.9 €

Process	Past (hour)	Present (hour)
Counting work experience	0,01	0,01
Counting childcare leave	0,02	0,00
Filling data in the sick list	0,01	0,01
Filling data in the protocol	0,01	0,01
Total	0,05	0,03

Process	Item
Number of sick leaves per year	6124 (psc.)
Time to improve the processing of 1 certificate of incapacity for work	0,05 (hour)
Time after improvement for processing of 1 certificate of incapacity for work	0,03 (hour)
Cost of an office worker's hour	2,4 € (2018)
Savings	293,9 €

Positive changes:

- A single system has been created that calculates the employee's length of service automatically at the time of disability and generates data in the protocol;
- There were decreased number of errors because now it is not the employee who manually counts, but the program.

Pic.3.4. HR Administrative work optimization project calculations

Qualification process project

Total savings per year = 7962.7 €

Current condition	Expected condition
It takes **84 hours** per year to fill the data into forms and **313 hours** per year to pass the documents for 91 shift leaders which is **954€ per year**	The program will allow to fill the form easier and faster
2003 hours of QM's works + 867 hours of HR's work = 4848€+2098€ = **6946€ per year**	The data can be pasted directly into SAP by copying from the program
6965 sheets of paper are used per year for qualification process	All data will be saved in the program. There's no need for paper.
6965 sheets of paper * 0,009€ per each = 62,7€ per year	**Total Savings = 7962,7€ per year**

Pic. 3.5. Qualification process project calculations

Trainings scanning project

Total savings per year = 722.8 €

Current condition	Expected condition
It takes 23 sec. to register into attendance list for one employee	A scanner will help to register the participant immediately
It takes 8 min. on average for HR to enter data from the attendance list into SAP system	The data can be pasted into SAP directly by copying from the program
2200 sheets of paper are used per year as attendance forms	All data will be saved in the program. There's no need for paper.
2200 sheets of paper * 8 min. per one = 293 hours per year. **293 hours * 2,4€ per hour (2018) = 703€ per year** **2200 sheets of paper * 0,009€ per each = 19,8€ per year**	**Total Savings = 722.8€ per year**

Pic.3.6. Trainings scanning project calculations

eFlow of "Perepustka" project

Total savings per year = 845.6 €

Process	Past	Present
removal of filled paper forms from the reception and production	50 h/y	0 h/y
Sorting paper forms by dates and departments	29 h/y	0 h/y
entering data in the NAVISION program	550 h/y	0 h/y

Positive changes:

- Saving money on paper forms;
- Saving working time of employees;
- Digitalized circulation of information.

Savings on paper forms = 5078*0,18=1027/32грн(€)=32€

Savings on working time = 339 hours*2,4€=813,6€

Total savings = 32+813,6=845,6€

*Forms (worked out) = 5708 pcs.per year

*Cost of an office worker's hour (2018)= 2.4 €

*The cost of one paper form = 0,18 UAH

Pic.3.7. eFlow of "Perepustka" project calculations

Practice qualification of NU LP students
(dual education approach)

Total savings per year = 3 840 €

Process	Past	Present
Recruiter's time to searching for the engineers position	3 month	1 month
Passing introduction term	6 month	3 month

Positive changes:
- Employee form NU LP is performing 2 times faster ;
- Dual education approach;
- Positive external company image.

Savings of HR employee working time for recruiting = 320 hours * 2,4€ = 768€

Total savings = 768€ * 5 engineers = 3 840€

*Cost of an office worker's hour (2018)= 2.4 €

*The average number of engineers hired per year = 5 employees

Pic.3.8. Practice qualification of NU LP students project calculations

As presented in the table above each project had financial effect mostly through savings in HR employees time. Even the savings are not tremendously high, but important thing is, that all the ideas were generated by HR employees by daily optimization of the processes in which the employee is involved. The aim, that was set by us as the company managers, was achieved through changing the mindset of our employees – from automated routine activities into daily continuos improvement of the processes, paying attention to value adding steps of the process and eliminating waste and non value adding activities.

LEONI faced financial crisis in 2019, that resulted in headcount reduction necessity. Due to effective implementation of continuos improvement culture, daily improvements and processes optimization the company had the possibility to reduce the employees' staff painless and with further compliance to all existing procedures.

In general, company reduced from 2019 till today 449 employees from Administrative staff and Production related staff, 8 employees in HR department. The total savings per 2019 and estimated total saving per 2020 – 1999200 Euro, 35190 Euro in HR department. As personnel costs are the main part of company budget, costs savings within personnel costs as a result influence plant cost rate of the company, making the company more competitive in the market.

	2019	2020												
	Total Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Year estimated
Headcount reduction, plant	308	16	48	77	0	0	0	0	0	100	0	0	0	241
Weighted average salary	510	510	510	510	510	510	510	510	510	510	510	510	510	
Cost savings, Euro	1035300	8160	32640	71910	71910	71910	71910	71910	71910	122910	122910	122910	122910	963900
Headcount reduction, HR dpt	5	0	0	0	0	3	0	0	0	0	0	0	0	3
Weighted average salary	510	510	510	510	510	510	510	510	510	510	510	510	510	
Cost savings, Euro	22950	0	0	0	0	1530	1530	1530	1530	1530	1530	1530	1530	12240

Pic.3.9. Status of Saving due to HC reduction

Conclusions to chapter 3.

The third section presents a thorough financial analysis of continuous improvement projects. The total savings for each project are presented in tables and general conclusions are formed.

CONCLUSIONS

The paper presents a theoretical generalization and gives examples of projects of continuous improvement (based in HR department), which formed the basis of the company's culture. The philosophy of the Toyota culture and Production management approach had a significant impact on LEONI.

Continuous Improvement (CI) is a fundamental principle for all kind of organizations to survive in a competitive environment. In this work, we try to show 9 CI projects. The results indicate that the themes and criteria identified also seems to be important. But the study also reveals other aspects influencing CI, for example, many different stakeholders involved in projects, a constantly struggle with time constraints and autonomous Project leaders. The results also indicate that organizational culture might be the key Theme to work with in order to achieve results. A possible driver specificly is the readiness for change that is inherent in practice. Overall, the empirical results indicate that applying Continuos Improvement culture is possible, but requires carefully consideration how to manage the complexity of different drivers and obstacles.

Benefits of Continuos Improvement culture are:

- Changing employee mindset
- Reduced costs from completing the same workflow in less time and/or with fewer people.
- Lean processes with improved quality.
- Lower investments in projects without business value.
- Reduced project costs when committed and effective teams are engaged.
- More clarity, transparency, and better communications.
- Superior resources management

When it takes together, the benefits transformed an entire organization into a visionary team that enjoys simpler, more streamlined work flows with a happier,

more effective workforce; achieves greater profitability; and is able to capitalize on new opportunities.

As you can see, LEONI Ukraine successfully implemented continuos improvement culture. The next important step is to contain culture of continuous improvement in the company that will add value into ongoing global strategy VALUE21.

REFERENCES

1. Emiliani, B., with Stec, D., Grasso, L. and Stodder, J., Better Thinking, Better Results: Case Study and Analysis of an Enterprise-Wide Lean Transformation, second edition, The CLBM, LLC Kensington, Conn, 2007.
2. Liker, Jeffrey, The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer, First edition, McGraw-Hill, 2003.
3. Monden, Yasuhiro , Toyota Production System, An Integrated Approach to Just-In-Time, Third edition, Norcross, GA: Engineering & Management Press, 1998.
4. Ohno, Taiichi, Just-In-Time for Today and Tomorrow, Cambridge, MA: Productivity Press, 1988.
5. Ohno, Taiichi, Toyota Production System: Beyond Large-Scale Production, Cambridge, MA: Productivity Press, 1988.
6. Ohno, Taiichi, Workplace Management, Cambridge, MA: Productivity Press, 1988.
7. Rother, Mike: Toyota Kata: Managing People for Improvement, Adaptiveness and Superior Results (Englisch) Gebundene Ausgabe, 2009.
8. Shingo, Shigeo; Dillon, Andrew, A study of the Toyota production system from an industrial engineering viewpoint (Produce What Is Needed, When It's Needed), Portland, OR: Productivity Press, 1989.
9. Spear, Steven, and Bowen, H. Kent, "Decoding the DNA of the Toyota Production System," Harvard Business Review, 1999.
10. Womack, James P. and Jones, Daniel T., Lean Thinking: Banish Waste and Create Wealth in Your Corporation, Revised and Updated, HarperBusiness, 2003.
11. Womack, James P., Jones, Daniel T., and Roos, Daniel, The Machine That Changed the World: The Story of Lean Production, HarperBusiness, 1991.

Appendix A

STAKEHOLDERS MATRIX

Stakeholder	How much does the situation impact them? (Low, Medium, High)	How much influence do they have over the situation? (Low, Medium, High)	What is important to the Stakeholder?	How could the stakeholder block or obstruct the situation?	How could the stakeholder contribute to the situation?	Strategy for engaging the stakeholder
Managing Director	H	H	Has an interest to develop management team to a new level of managing employees (from manager to coacher) Prepare a company to a new challenge New clients \ customers attraction \ involvement Implementtion of new projects Increasing effectiveness Costs saving Company image	Has possibility to cancel the project Can have pressure on the team	Budget approval Constant monitoring and control of current and future stasus of the projects	Communication and cooperation with Board Members
Head of HR	H	H	Management team readiness to take challenges Managing Director's / Management Team's / HR employees' support Indirects reduction Reorganization Employees engagement Development of HiPo candidates Talent Management Project implement		Constant monitoring and control of current and future stasus of the projects Trainings, coaching, mentoring, support	HR key leaders attract and involve, LPSplus Manager and team involve
Management Team	H	H	To receive a new challenge, learn new management approach	Lack of appropriate knowlegdes, skills, trainings Correct targets orientation and understanding		
Lean \ LPSplus Manager	H	H	Projects implementation Processes optimization and standardization Targets achievement	Has possibility to cancel the project	Constant monitoring and control of current and future stasus of the projects	
HR Leaders	H	H	Projects implementation Targets achievement			
HR employees	H	M	Manager/leader's support Motivation Recognition	Stoppage of the project Lack of understanding of the project Sabotage	New ideas generating	
Employees of different dpts	H	M		Undesirability to change smth or her/hisself Undesirability to leave her/his comfort zone	New ideas generating	
IT	L	L	Information			
Communication	L	L	Information			