



**LAUREA**  
UNIVERSITY OF APPLIED SCIENCES

*Together we are stronger*

Business' challenges at the most prestigious  
Finnish tennis school:  
Improved by research, analysis, and develop-  
ment of a technological solution.

Natalia C. Mariscal

2021 Laurea



Laurea University of Applied Sciences

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Hedman Tenniskoulu Oy is the most famous and successful tennis school located in Helsinki, Finland. While working there as a tennis coach, I identified several challenges at the company, for example, missed communication; inconveniences; complexity and unclearness; defective transmission of information; uncertainty; waste of paper and time; and an absence of centralization, mobility, and fast & effective interaction. The purpose of this thesis was to conduct research that could help to develop recommendations for improving the company's activities. The goals/objectives were, to create a list of the company's deficiencies; to analyse them through and to suggest a viable solution for them.

A research model design was created to collect the primary data needed from the company. The qualitative research and analysis methods were used, and the case study research was its main tool. Also, a personal interview was conducted with one of the owners, Ms. Sanna Hedman; a survey of their tennis coaches as well as the personal experience of the author while working there. The collected data was analyzed with qualitative data analysis, utilizing its survey and framework analysis.

The development methods utilized were Waterfall - S.D.L.C. approach (concatenation) and Lean Six Sigma methods (improvement of existent processes and creation of new ones). The theoretical analysis framework was executed by comparing the company with six analysis frameworks plus other concepts: 1) Business analysis framework and its Solution life cycle, 2) Enterprise, 3) Business architecture, 4) P.O.L.D.A.T. domains 5) Green processes management and 6) Business process reengineering (BPR) - I.N.S.P.I.R.E. steps. Also 7) Intranet and 8) H.R.M.S. A list of sixteen business challenges were identified and described. Based on them, eight goals were created, for example: To strive to find a better approach; to execute their daily activities in a smoother and more efficient manner; becoming a more harmonious, leaner, greener, centralized & efficient company; bringing better client satisfaction & increasing the company's profits. Sixteen S.M.A.R.T. objectives were also generated.

The outcome of the project was a recommendation for the management to acquire a technological solution, a new software like the Intranet - H.R.M.S. Human Resource Management System, that could be built into a mobile application (cell phones), or a website, letting them instantly connect and access the information needed to carry on with their daily activities in a more efficient, faster, greener, and productively manner. A detailed prototype of a Hybrid Intranet H.R.M.S. Mobile App, using Marvel.com was created; and a website as well, using WordPress.

Client's feedback, Hedman Tenniskoulu manager & owner, Ms. Sanna Hedman replied: "The project delivered good results, and the prove of it is that we, as a company, have already adopted Natalia's suggestion from her thesis, and based on it, we have acquired a system called MyTennis, which contains the information about clients, courts, groups, and coaches on the mobile, reducing the utilization of papers and having everything on our phones."

Keywords: Tennis school, optimization, Business analysis framework, P.O.L.D.A.T. Domains, Business Process Reengineering (BPR), Hybrid Intranet-H.R.M.S. Mobile App.

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## 1 Introduction

This thesis, business analysis, research and development work are about [HEDMAN tennis school \(Tenniskoulu Oy.\)](#), located at [Tali Tennis Centre, Helsinki, Finland](#).

I have been teaching tennis during several years for this company. They helped me when employed me as a tennis coach and become my sponsor to obtain my first working visa in Finland, which later lead to my official residency in this country and posterior Finnish citizenship.

Through this thesis work, I wanted to respectfully analyse their deficiencies, find a solution, and give back to them all the help, friendship, and love that I felt from the members of their institution.

### 1.1 The company

Tennis Hedman is the oldest and largest tennis school in Finland. The best and most fun, many say. The school was founded in 1969 by gymnastics teacher, multiple Finnish champion Heikki Hedman. More than 90,000 tennis enthusiasts have participated in the tennis school's activities (Company's website 2021).

### 1.2 Current state of the company

Today, Hessa's son, Mika Hedman, who has been CEO for ten years, has been the leader of the tennis academy for the past 4 years (Company's website 2021).

As the website of Dun and Bradstreet's mentioned, the company is part of the education & training services industry. Tenniskoulu Hedman Oy, was incorporated in the year 2000 and [generates \\$1.01 million in sales \(USD\)](#) (Dun & Bradstreet's 2021).

They have 20 tennis coaches, 2 directives, 2 head coaches and 1 HR manager, more than 700 clients, 5 tennis events and over 21,600 tennis lessons per year!

Skilled, on-time training coaches are responsible for the training. Many of their coaches are backed by their own personal experience at the national or international level.

The development of the industry is closely monitored, and the latest training methods are internalized by continuing training of the boarder. Coaching takes place in tiers. Everyone has a group of gaming experience, skills, and basic fitness. A broad variety of groups enable clients to play on every weekday from mornings to evenings (Company's website 2021).

Their moto is: "Speed, fun & learning."

Their slogan: "Professional tennis coach for you."

Their products are:

- ❖ Adult tennis
- ❖ Junior tennis
- ❖ Business tennis
- ❖ Tennis clinics
- ❖ Fit 4 tennis
- ❖ Summer tennis
- ❖ Tennis trips

### 1.3 Problem statement

While working there, I witnessed different complains that the different stakeholders (management, Tennis coaches, clients) made daily.

The most important business challenges to be solve, that will be analysed by my research and development work will be the ones concerning to the improvement of their organizational, operational & communicational processes between the management & their employees (Tennis coaches).

I analysed those deficient processes & some of the challenges generated were on summary:

- ❖ Missed communication, inconveniences, complexity & unclearness.
- ❖ Defective transmission of the information,
- ❖ Uncertainty on many occasions,
- ❖ Waste of paper (green-less) & time,
- ❖ Absence of centralization, mobility, instant resolution & interaction (lack of mobile technology).

Based on the research's problems that I am presenting on this thesis, the type of research-design that I applied is a case study.

I will strive to create an efficient solution to improve & modernize some specific processes, smoother the communication between all their stakeholders which will maximize their client's satisfaction and increase the company's profits.

#### 1.4 Goals and objectives of this thesis

Based on the problem statement above described, the objectives/goals of this thesis created for this company are:

- ❖ Striving to find a better approach to execute their daily activities, in a smoother and most efficient manner
- ❖ Improving their processes
- ❖ Becoming a more harmonious, leaner, greener, centralized & efficient company
- ❖ Bringing better client's satisfaction &
- ❖ Increasing the company's profits.

The objectives/goals created for this thesis are:

S.M.A.R.T. (strategy to reach any objective). They are specific, measurable, achievable, realistic, and executed within a time frame:

- ❖ To create a list of the company's deficiencies.
- ❖ To analyse them through the analysis frameworks.
- ❖ To suggest viable solutions.

## 2 Research, development & theoretical analysis frameworks

structure & description of concepts to be apply

### 2.1 Research (Methods/Collection of primary data)

This subject will be executed in the chapter 3.2.

#### 2.1.1 Research model design

It is the structure of this thesis report. Like a blueprint of this thesis, to be followed by the researcher, in his/her search for solutions to their client's problems.

It defines the study type, research questions, hypotheses, variables, data collection methods (Research methods), development methods and the theoretical analysis frameworks. The outcome of all those studies will be a solution or suggestion to the company's (main stakeholder) problems.

According to the information obtained from the website Boundless Resources, we could say that there are several types of research model designs, one of them is the qualitative, explanatory: case study, which I will be utilizing for this thesis work about Hedman Tenniskoulu (Boundless Resources 2021).

It represents a synthesis of how this thesis is divided into chapters, and what are the subjects explained and analyse in each one of them.

This subject will be executed in the chapter 3.1.3

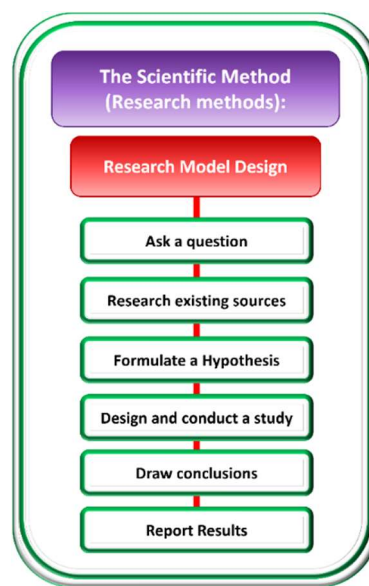


Figure 1 - Research methods - The scientific method

### 2.1.2 Qualitative research methods

It is the method utilized to obtain information from the stakeholders, based on the accumulation of generic and descriptive information, like images, videos, text, and people's written or spoken words; not numerical, exact, or quantitative.

There are many types, but the ones I have utilized for this project are mixed methods, a combination of the examples from the following figure:

Description:

#### 1) Case study research

A case study is holistic study of one person, group, or event. Every aspect is analysed to understand why certain event occurred.

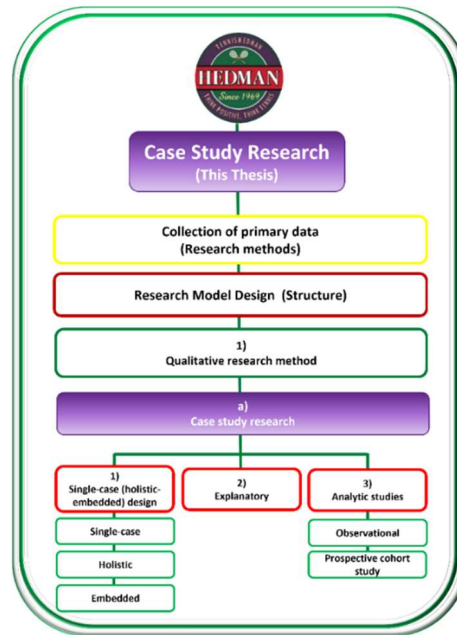


Figure 2 - Research methods - Case study research

### 1) Single-case (holistic-embedded) design

#### a) Single case

As Yin mentioned in his 2003 book “Case study research, design and methods”, single case is a type of case study research that has many sub-units of analysis. (Yin 2003).

#### b) Holistic

When several events are seen as a totality of a whole, and not in a divided point of view for each one of them. The terminology holism was created by Jan Smuts in 1926 in his book “Holism and Evolution” (Smuts 1926).

#### c) Embedded

Edmonds & Kennedy referred on their 2017 book “An applied guide to research designs: Quantitative, qualitative, and mixed methods. chapter 16 | Embedded approach”, that the embedded approach is a concatenation of data, where the most relevant information is ubicated has primary and inside of it, a chain of other info is described or analyse, as secondary, etc (Edmonds & Kennedy 2017).

### 2) Explanatory

This type of case studies trys to discover the factors that may have previously occured, for a certain event to happen (Very-well mind 2021).

### 3) Analytic studies

It is a study of the causes that gives origin to certain events. I will analyse the ethology of their company's deficiencies.

#### a) Observational:

Observational studies are part of the analytic studies. They are plain observations, and not interventions are made from the investigator.

#### b) Prospective cohort study:

Based on the article made by Jae W. Song, MD1 and Kevin C. Chung, MD, MS. In 2010, called "Plast reconstr surg. observational studies: Cohort and case-control studies", they mentioned that a prospective cohort study, centre its goals in study a certain subject starting in the present and planning its evolution into the future (Song & Chung 2010).

### 2) Observation/Participant observation

Own experience. I have been teaching tennis during years for this company. They helped me when they employed me as a tennis coach and become my sponsor to obtain my first working visa in Finland, which later lead to my official residency in this country and posterior Finnish citizenship.

Through this thesis work, I wanted to respectfully analyse their deficiencies to produce a solution and give back to them all the help, friendship, and love that I felt from the members of their Company.

### 3) Research questions

Are the main questions the business analyst (me: Natalia in this case) should make to his/herself to try to get response that will build this thesis work (Olsen Jr.).

This subject will be better described and execute in the chapter 3.2.1.

### 4) Interview/Questionnaire

An interview is an organized dialogue where one person is the questioner and the other the responder.

### 5) Surveys

Asked the stakeholders a set of questions compared to the case study, given through a document. This subject will be better described and execute in the cm chapter 3.2.1.

### 2.1.3 Qualitative data analysis (Results)

To analyse the data, I will use the qualitative data analysis, which analyse only words, observations, pictures, and symbols. Numerical information is not included, neither analysed, as is mentioned in the article from the Educational portal, called “Qualitative Data Analysis,” from the website named Business Research Methodology (Business Research Methodology).

#### 1) Framework analysis:

This subject will be executed in the chapter 3.3.

According to the website Stats work and its article “Statistical consulting,” inside of the qualitative data analysis, we can find the “Framework analysis” (Benchmark), which is an advanced method to analyse and assort the data collected depending on the problems and subjects (Stats work 2021). It has five steps:

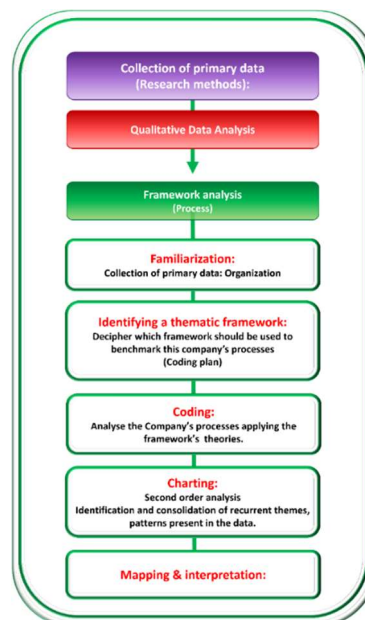


Figure 3 - Research methods - Qualitative data analysis - Framework analysis

#### 2) Survey analysis

Try to quantify the answers chosen by the stockholders who completed the survey. This subject will be better described and execute in the chapter 3.2.3.

### 2.2 Development (Management approaches/methodologies)

This subject will be executed in the chapter 3.1.

To analyse/develop this project I utilized the following management methodologies/ap-proaches:

Process based methodologies:

### 2.2.1 Waterfall - SDLC (Approach)

It is part of the traditional approaches, it involves lot of planning to ensure that the completion of a sequence of specific tasks gets me to the delivery of a final, finished product by a certain date and within a budget.

It will help me to organize my project's needs, plan out steps to meet timelines and budgets.

It will require a fair amount of planning and requirements gathering before work begins.

Without that initial step, steps can be missed, incomplete, or even out of line (Hughey 2009).

I will complete a task and hand it down for it to be used in a following task. Further, any alteration to my project requirements could cause a change in scope.

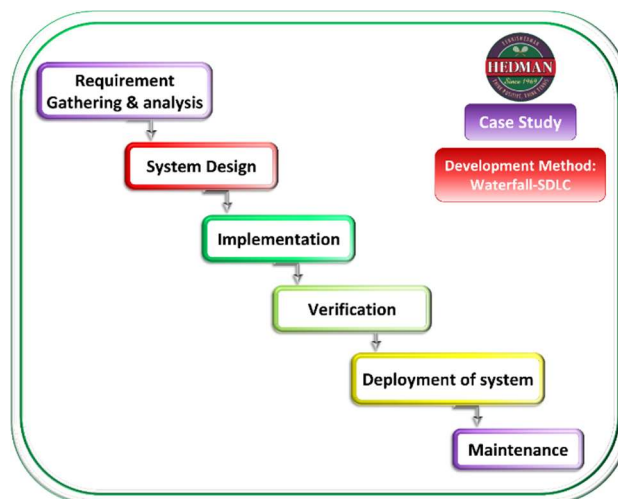


Figure 4 - Development methods: Waterfall - SDLC

### 2.2.2 Lean six sigma (Method)

According to the information obtained from the book “The lean six sigma guide to doing more with less: Cut costs, reduce waste, and lower your overhead” of Mark George from 2010, this management approach is exactly what I need to manage this case study research, but I will use its influence only partially, because for this project I will not need any numerical calculation (quantitative research) as this management approach suggested. This thesis work will be qualitative research, without numerical information, only in writing, for example: survey, interview, observation, case study data collection (George 2010).

Six sigma is a management approach, which focuses on the improvement of existing processes, through the D.M.A.I.C. system, it has five phases:

- a) D.M.A.I.C. system: Improvement of existing processes
- 1) Define, problematic process and goals
  - 2) Measure, current process and collect data.
  - 3) Analyse, data and find the root of defects
  - 4) Improve, your process based upon your data analysis and test it.
  - 5) Control, your new process and monitor for defects.

And tries to eliminate Waste/Muda (Lean)

b) Waste/Muda:

- 1) Defects
- 2) Over-production
- 3) Waiting
- 4) Non-utilized talent
- 5) Transportation
- 6) Inventory
- 7) Motion, and
- 8) Extra-processing.

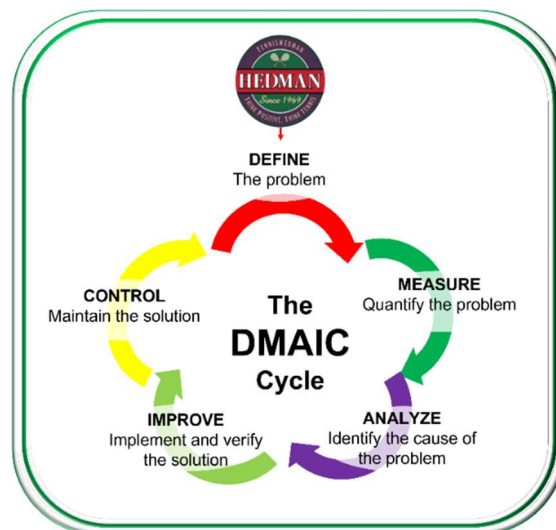


Figure 5 - Development methods - Lean six sigma - D.M.A.I.C. Cycle

### 2.3 Theoretical analysis frameworks (Benchmarks)

This subject will be executed in the chapter 3.3.

Analysis frameworks are the theory frameworks that must be used as benchmark to analyse and compare the present architectural state of the company, find their problems (deficiencies), allocate them into their respective domains and create or modify their architecture to be able to solve them, to generate progress and evolution on that company.

On this case study, I will utilize the following frameworks, described below:

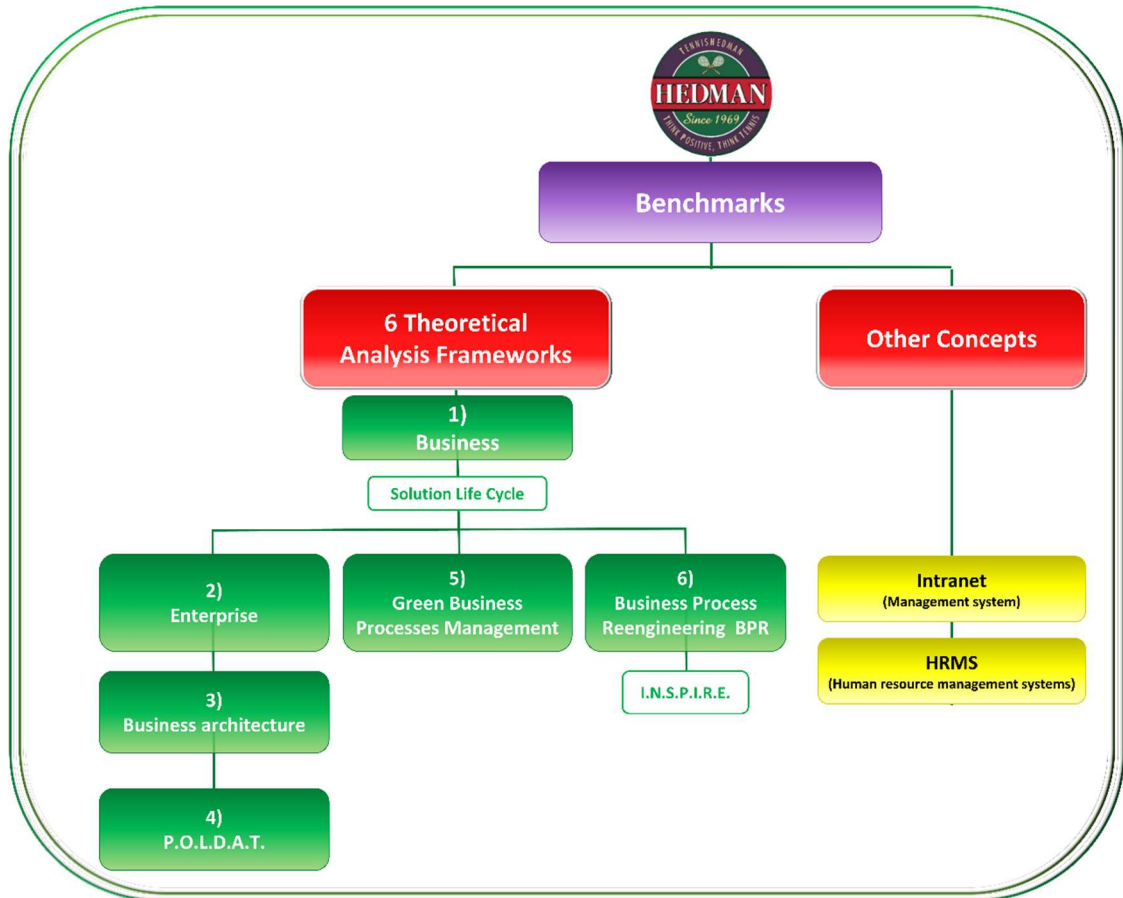


Figure 6 - Frameworks - Benchmarks - Theoretical analysis frameworks & other concepts

### 2.3.1 Business (Analysis framework)

As described on the book of Amit Johri, from 2010, “Business Analysis”, the business analysis framework it is an exploration of the subject company, which helps to analyse its business structure, methods, interactions & results to try to find out what it is missing or mistaken to achieve their strategic goal (Johri 2010).

Often, the suggested solutions are specific software or newly developed I.T. applications, including process optimization as well, changes in the organization or their strategy.

All these studies are carried out by the business analyst or B.A. working as an internal consultant with the stakeholders, to solve some organization problems.

Through a holistic view of the situation, he examines business situations, recognize deficiencies areas and searches ways to improve them by the utilization or improvement of the information systems.

This subject will be executed in the chapter 3.3.1.a

### 1) Solution life cycle

It is the name given to the steps or blueprint needed to execute the Business analysis framework (Johri, Amit. 2010). A detail graphical description is below:

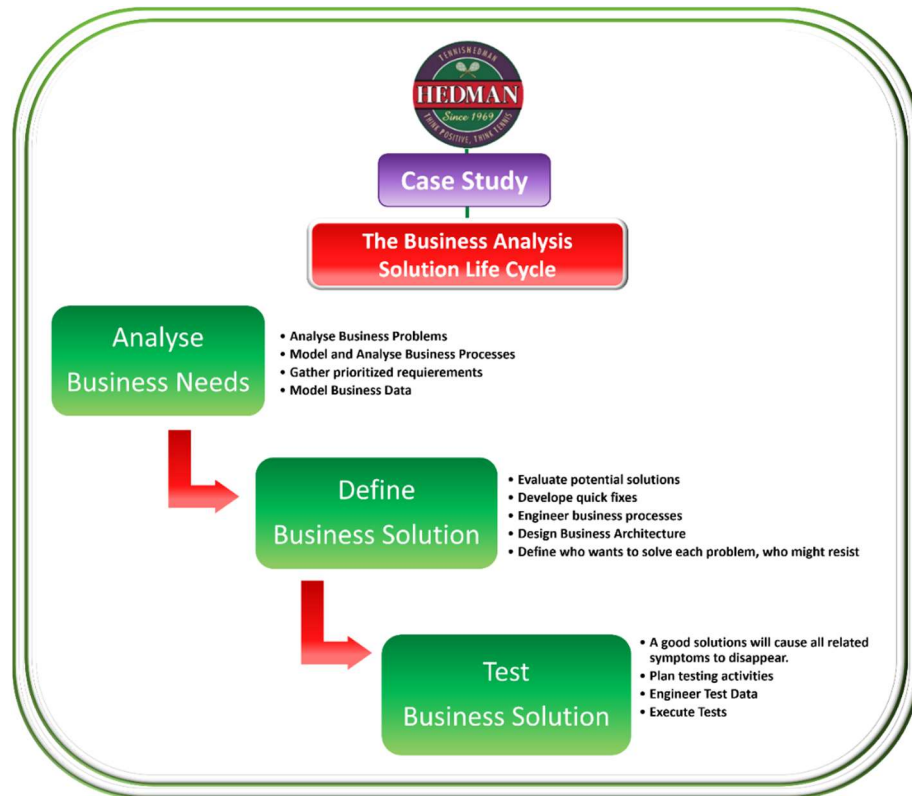


Figure 7 - Frameworks - Business analysis framework - Solution life cycle

#### 2.3.2 Enterprise (Analysis framework)

The enterprise analysis framework is part of the business analysis. Describes the present and future capabilities of the company (Johri 2010).

Focuses on understanding the needs of the business, its strategic direction, and finding initiatives that will allow a business to meet those strategic goals (Johri 2010).

Emphases on analysing the company's business architecture, business processes, P.O.L.D.A.T. domains & deficiencies trying to create goals, aims, deliverable task, feasibility studies, risks and find a solution to be implemented (Johri 2010).

(EA) Enterprise analysis process has six steps:

- 1) **Business architecture**
- 2) **Project scope**

- 3) Feasibility study
- 4) Risk assessment
- 5) Business case
- 6) Decision packages

### 2.3.3 Business architecture (Analysis framework)

The business architecture is a strategic resource to understand the current state of the company and to elaborate proposals of changes/improvements for the future to achieve their goal, aligning their business operations and supporting I.T. systems (Johri 2010).

It describes the stakeholders (people involved in this project), their functions, company's rules, business strategy, goals, aims, processes, procedures, competencies, locations and technology through documents, models & diagrams.

The business architecture process includes:

- 1) Define the scope of the project (Goals, objectives)
- 2) Plan de business architecture activities
- 3) Create or update the documents or drawing
- 4) Conduct a quality review of the business architecture components

The deliverables of this enterprise analysis process are:

- 1) Strategic plans, goals & strategic themes
- 2) Organization structures, identifying business locations and organizational units
- 3) Business unit goals and objectives for each organizational unit

The business architecture forms part of a wider view called enterprise architecture, which has five components:

- 1) Business architecture
- 2) Information architecture
- 3) Application architecture
- 4) Technology architecture

## 5) Security architecture

### 2.3.4 P.O.L.D.A.T. (Analysis framework)

The P.O.L.D.A.T. analysis is a framework and one of the technics to create or modify the business architecture of a company and helps with the business processes re-engineering (Johri 2010).

It facilitates to the business analyst (B.A.) the assessment of a company and its business architecture, to help identify the places where different deficiencies might be originated, the person in charge, the reasons why they might occur, to whom they may affect, the search for viable solutions to improve them.

It divides the totality of the company in six principal areas called “Domains.” Every company is divided in six domains:

- 1) P - Process
- 2) O - Organization
- 3) L - Location
- 4) D - Data
- 5) A - Application
- 6) T - Technology

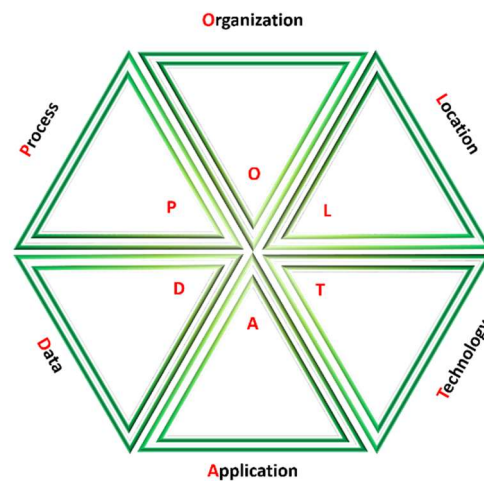


Figure 8 - Frameworks - P.O.L.D.A.T. Analysis framework

Giving it this way the name of P.O.L.D.A.T. Each one is represented as 1/6 parts of a hexagon. If a change occurs in one of them, it will be reflected in the rest of them, and change must be executed as well. Also, inside of them will be artefacts developed by the system, for example: documents, tables, matrices, graphs, models (Johri 2010).

The business architecture analysis includes the examination of the P.O.L. domains (Process, organization & location).

When all the domains are analysed, including the D.A.T. (Data, application & technology) the entire enterprise architecture analysis is complete.

### 2.3.5 Green processes management (Analysis framework)

On his 2010 book “Introduction to green process management”, Samuel E. Windsor explains that “Green” is protecting, measuring, monitoring, and reducing the impact on the planet (Windsor 2010).

Carbon emissions, waste to landfills, and water usage could be measure.

Business Process Management:

Your business processes, the service you deliver generates an environmental impact (carbon emissions). Those business processes could be fix by adding requirements to be green, goals and objectives (Windsor 2010).

Being sustainable, reducing the consumption of some products, recycling, and measure carbon emissions could be part of the solution.

Below you will find a blueprint or steps for a company to evolve and become green.

Table 1 - Frameworks - Green processes management - Become a green company

Road map to green		
1	Determine what green means to your organization	Define green in a policy or mission statement with management commitment
2	Determine how you are going to measure green	Define measurements and how measurements will be made of carbon emissions, waste, and so on
3	Baseline performance	Set baseline performance to the defined green measures
4	Set goals	Use baseline to determine improvement goals
5	Educate employees	Train employees on what green is and how their actions will impact green efforts
6	Add green measures to performance measures	Make green a key process metric to be reviewed and acted on with all other company metrics; add green performances to employee performance goals
7	Manage projects	Manage green projects with a steering team or other visible method with structured reporting to management to ensure ongoing success.
8	Measure, report, and act on green metrics	Make green metrics a part of the culture of the company.

ISO standards, such as ISO 14001, define general requirements that a green company tries to accomplish, they created some methods to manage and reduce the environmental impact of services/products and to formulate new policy and objectives inside their companies (Windsor 2010).

ISO 26000 is about social responsibility and sustainability of a business.

### 2.3.6 Business process reengineering - BPR (Analysis framework)

Created by Hammer and Davenport to improve organizational effectiveness and productivity into the organizations (Hammer 1990). It could completely remake main deficient business processes designing them in its totality (Business Process Re-engineering Assessment Guide).

Frequently, it will utilize innovative technology (automation) to improve them. In the 1990s, it was related with the "downsizing" of companies worldwide (Hammer 1990).

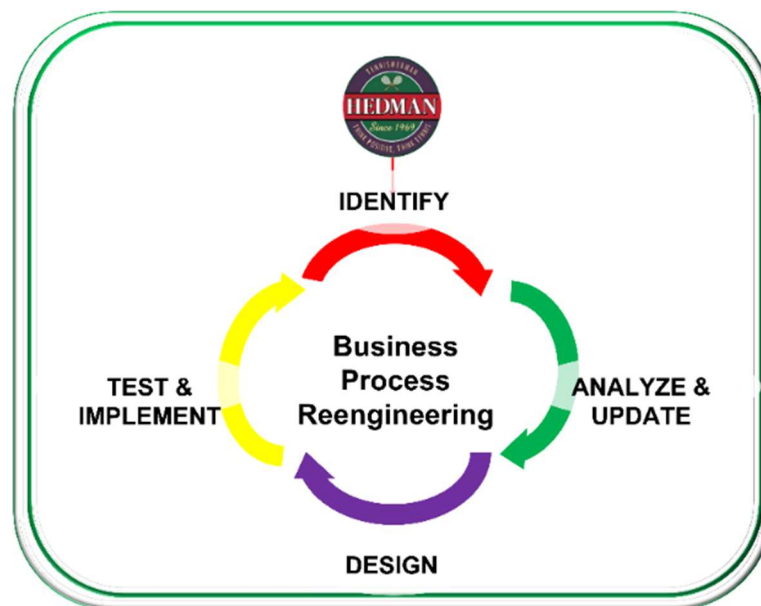


Figure 9 - Frameworks - Business process reengineering (BPR)

#### a) Steps for reengineer a business (Taylor).

- 1) High-level assessment: of the organization's mission, strategic goals, and customer needs.
- 2) Technology: enhances data distribution and decision-making processes.
- 3) Form functional teams: By alter functional organizations.

#### b) BPR Framework: "I.N.S.P.I.R.E.," developed by Bhudeb Chakravarti (Taylor).

The seven steps are:

- 1) Initiate: A new process reengineering project and prepare a business case for the same.

- 2) Negotiate: With senior management to get approval to start the process reengineering project.
- 3) Select: The key processes that need to be reengineered.
- 4) Plan: The process reengineering activities.
- 5) Investigate: The processes to analyse the problem areas.
- 6) Redesign: The selected processes to improve the performance and
- 7) Ensure: The successful implementation of redesigned processes through proper monitoring and evaluation.

### 2.3.7 Intranet (Management system)

As described by Hannah Price this year, on her article “Eleven undeniable benefits of an intranet,” an Intranet management system is usually a private company’s network where its members could access and share the centralized company’s information, culture, policies, procedures, documents, data, events, and employee’s information (Price 2021).

### 2.3.8 HRMS (Human resource management systems)

The company Connecteam.com., described on their website an example of Human resources management system (HRMS) software that helps companies to execute their human resources activities and processes during the employee’s lifecycle (Connect team 2021).

## 3 Outcomes

In this chapter I will be applying the information from chapter 2 “Analysis frameworks”, to identify, analyse and propose solutions to their defective processes.

### 3.1 Research

Applying the research methods/approaches (described in chapter 2.2):

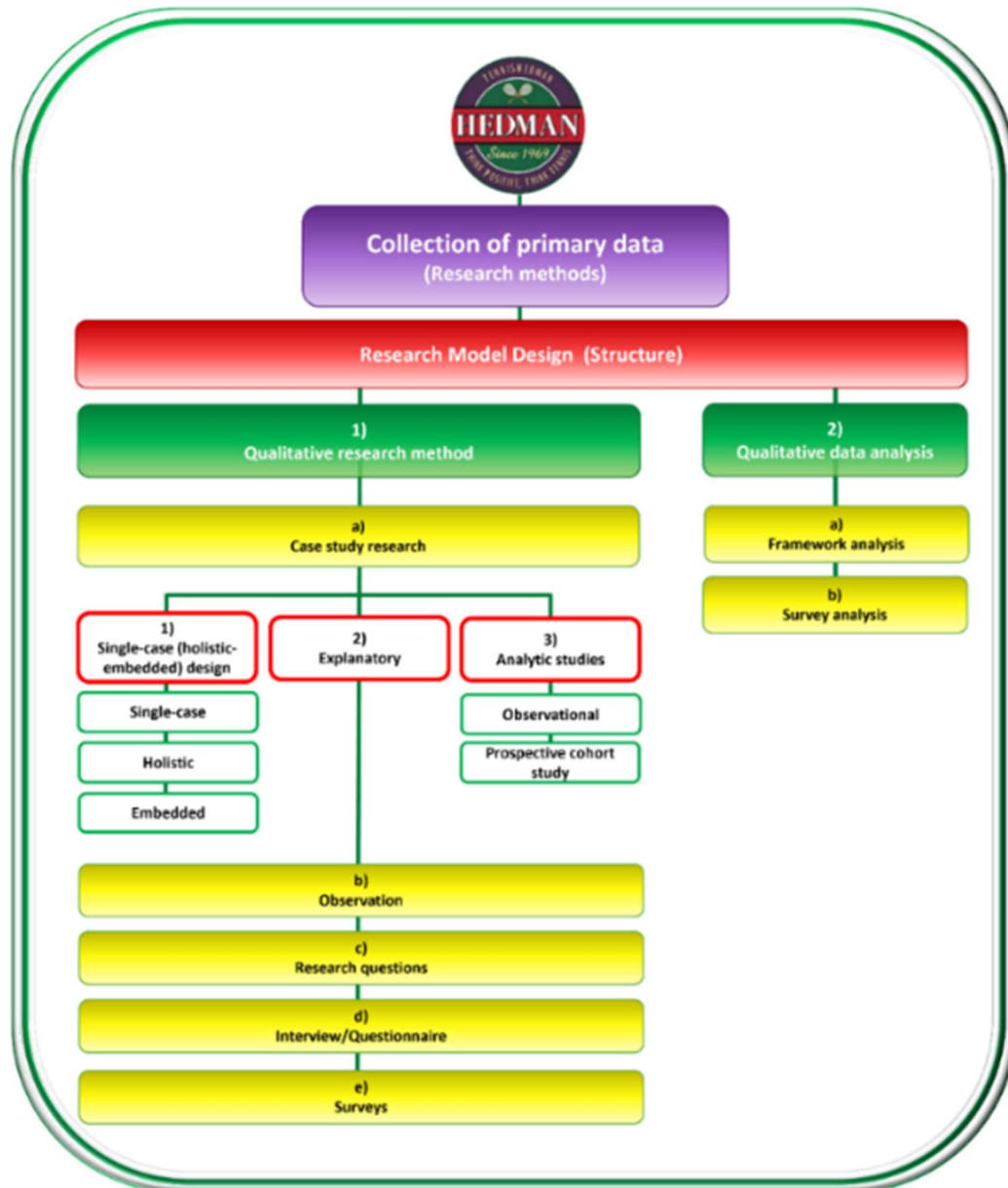


Figure 10 - Research methods - Research Model Design - Case study Research

### 3.1.1 Research model design

The structure of this thesis report is based on a theoretical study. It will be a cooperation between the above-described Waterfall - SDLC approach and the Lean six sigma method.

The following picture represent a synthesis of how this thesis is divided into chapters, and what are the subjects explained and analyse in each one of them.

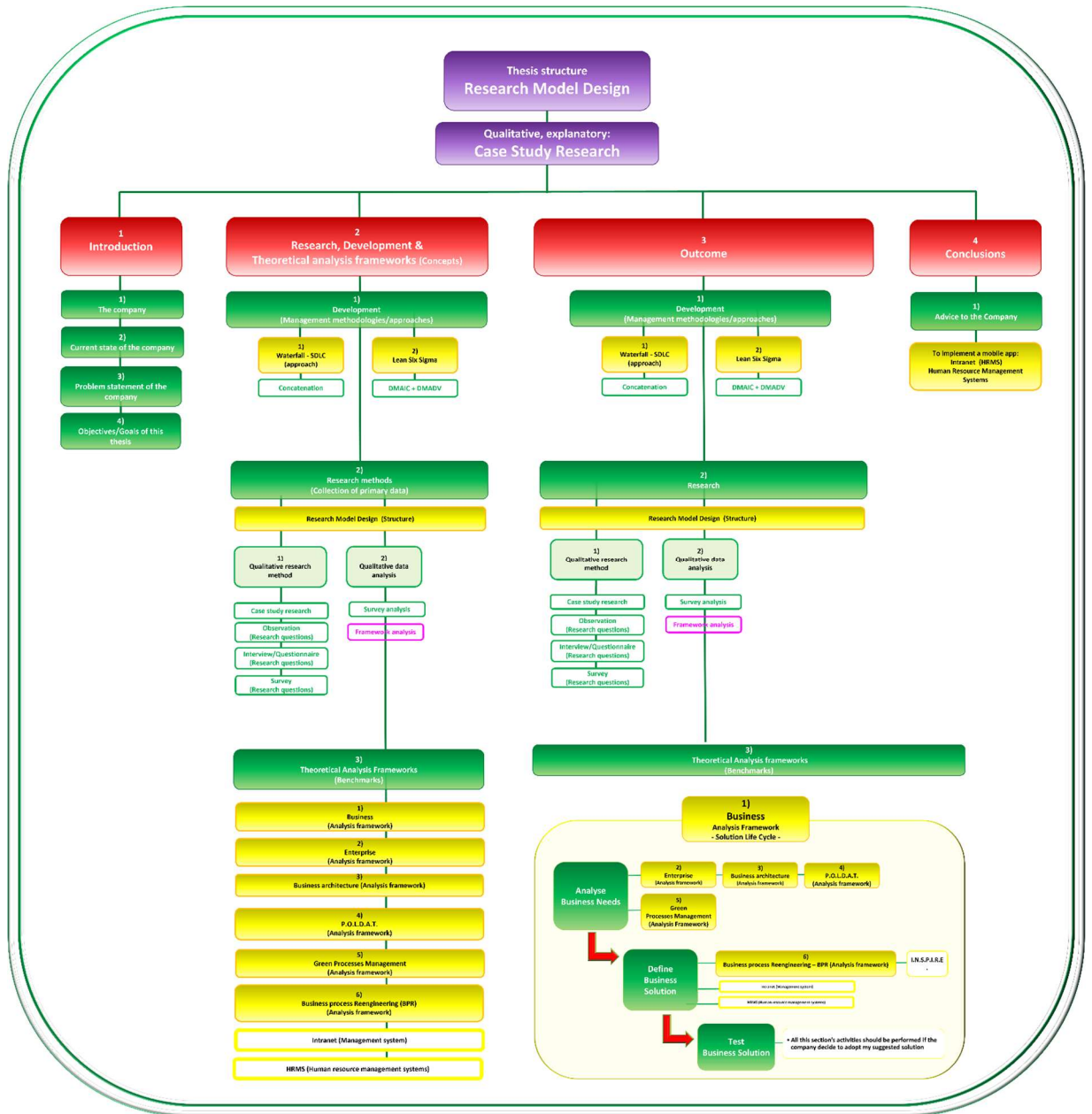


Figure 11 - Research methods - Collection of primary data

### 3.1.2 Qualitative research method

It is the method utilized to obtain information from the stakeholders, based on the accumulation of generic and descriptive information, not numerical, exact, or quantitative (Described on chapter 2).

There are many types, but the ones I have utilized for this project are mixed methods, a combination of the following:

## 1) Case study research

It is the main qualitative research method that I have utilized to create this thesis work. Each one of the chapters and its contents are the building stones of it. This case study is a concatenation (Waterfall) of analysis and actions specified by the different utilized:

### a) Case study: Process

A case study has certain steps required to be executed: Following you will find the steps required and in what chapter of this Thesis I have completed them.

1) Identify the problem: Chapter 1 - Introduction

2) Build your hypothesis: Chapter 2.3 - Analysis frameworks

3) Choose your method of research: Chapter 2.2 Collection of primary data: Case study, observation, interview, survey.

4) Conduct the research: Chapter 3 - Outcomes

5) Analyse the results: Chapter 4 - Conclusion

## 2) Observation/Participant observation

I execute the observation inside the company during years that I have been teaching Tennis for this company.

Through this thesis work, I wanted to respectfully analyse their deficiencies to produce a solution and give back to them all the help, friendship, and love that I felt from the members of their company.

Unfortunately, I identified sixteen deficiencies, which are described below, in the following chapters & sub-chapters:

### 1) Business & enterprise analysis:

a) Hedman's hierarchical organization diagram plus company's deficiencies.

b) Deficiencies: 16 - Descriptions

c) Deficiencies: Categorization (creation and/or maintenance)

d) Deficiencies: Modelling the business processes.

### 2) Business architecture analysis:

- a) P.O.L.D.A.T. Deficiencies by domain: sixteen

### 3) Research questions

- a) Who is the main stakeholder of this thesis?
- b) What is the current state of their company?
- c) What are their problems?
- d) Are their business processes green?
- e) Are their business processes smooth, harmonious, lean, centralized & efficient?
- f) What are the goals for this company?
- g) What are the objectives needed to achieve those goals?
- h) What management methods/approaches should I use to assess this thesis work?
- i) What research methods should I use to collect information needed to execute this thesis?
- j) What theories, about possible solutions to similar problems, already exist?
- k) Do they have enough technological help?
- l) What would be a possible solution to their problems?
- m) What is the advice/suggestion for this company?
- n) I also created a specific questionnaire for the tennis coaches with 20 questions more, that you will find on the survey section of this chapter (3.2.1. point 5)

### 4) Interview/Questionnaire

I carried out an interview with Ms. Sanna Hedman, one of the owners.

I asked for authorization to execute my thesis based on her and her husband's tennis company, and I mentioned what it will be about: analyzing their company from the tennis coach point of view, trying to identify deficiencies that could be fixed, to achieve a bigger efficiency on the overall company.

She mentioned her concerns about not having a new recruiter's (Tennis coach) welcome guide.

## 5) Survey

I sent the surveys to every Tennis coach to find out what was their opinion regarding some problematic situations that I identify based on my own experience by working there. The survey has 20 questions, and they are divided in 5 types:

- 1) Technology
- 2) Tennis lessons (Attendance & general information)
- 3) Tennis clients (General information, tennis levels & marketing)
- 4) Tennis coaches (Recruitment & continue education)
- 5) Tennis coaches (Salary & sickness)

Table 2 - Research methods - Survey

A	Technology:	A	B	C
1	How is your relationship with technology?	Comfortable	Uncomfortable	
2	Regarding your daily activities: Do you try to do as much as possible with your SMART Phone?	Yes	No	
3	What do you think about printing info in PAPER?	OK	Waste of \$ & Natural resources	Uncomfortable to carry around
4	Do you ALWAYS carry a pen/pencil with you to be able to write anything?	Yes	No	
<b>B Tennis Lessons (Attendance &amp; General Info):</b>				
5	In your Tennis Lessons, do you take assistance EVERY TIME (& write it down)?	Yes	No	
6	How would you prefer to take assistance in your Tennis Lessons?	Like NOW (pen & paper)	With your SMART Phone	
7	Do you ALWAYS read ALL the info that is written by ROGER into the SATURDAY'S Info-sheets?	Yes	No	
8	Would you like to receive the same type of info, but EVERY DAY?	Yes	No	
9	How would you prefer to receive daily info about your Tennis Lessons?	Like NOW (pen & paper)	With your SMART Phone	
<b>C Tennis Clients (General Info /Tennis Levels &amp; Marketing):</b>				
10	Do you think that it would be useful to CREATE/USE/SHARE & UPDATE between ALL OF US a small database with the Technical & "Special" characteristics of OUR tennis clients, based in OUR own experiences with them?	Yes	No	
11	Do you think that you would be able to collaborate with it sometimes, writing some KEY POINTS about your clients?	Yes	No	
12	Do you think that this SOLUTION would help our Dear ROGER'S job, by helping him to EASILY distinguish the CORRECT Tennis Level of our CLIENTS?	Yes	No	
13	If the MANAGEMENT would handle to us a little present to give to their Tennis clients in their birthdays & Special Holidays, do you think that it would be a GOOD MARKETING tool and help to INCREASE the client's satisfaction and the Company's Profit in the long run?	Yes	No	
<b>D Tennis Coaches (Recruitment &amp; Education):</b>				
14	Recruitment: Do you think that should be CREATED a Company Procedure's Manual (or Video) guidance to help with the integration and understanding of the Company's Values, Goals and Procedures needed and demanded to be considerate a valuable employee for the firm and for any NEW upcoming Tennis Coach?	Yes	No	
15	Videotaping EVERY MONTHLY EDUCATION and posting them on-line, usually under SAMU'S guidance, would be helpful to refresh the knowledge given in those meetings?	Yes	No	
<b>E Tennis Coaches (Salary &amp; Sickness):</b>				
16	To receive your salary, you MUST submit a detailed info regarding your monthly Tennis Lessons: How would you prefer to do it?	Like NOW (pen & paper or e-mail)	AUTOMATICALLY, by take assistance of your Tennis CLIENTS with your SMART Phone, will also take your OWN assistance and hours worked will be registered	
17	When you are sick, have an emergency or need to travel, is it hard to find out who is available to cover you?	Yes	No	

18	Having an ON-LINE daily board of VOLUNTARY AVAILABLE'S Tennis Coaches, where easily you can see who is available, what day & what time, would be considered by you as a feasible SOLUTION to the above-mentioned issue?	Yes	No	
19	Would the CLIENTS be less SURPRISED (Happily or Unhappily) if they would be informed by the Management's e-mail that other coach will be replacing their Primary one?	Yes	No	
20	Do you have any other comment that you would like to add?	Yes	No	

### 3.1.3 Qualitative data analysis (Results)

#### 1) Framework analysis

The analysis from the collected primary data through the framework analysis, gave me as a result the following actions, that I have already executed in its totality through the chapter 3.3:

- 1) Examined the company processes
- 2) Identified sixteen deficiencies
- 3) Categorized them (create or modify their business architecture)
- 4) Modelized the business processes
- 5) Analysed their business architecture by applying the P.O.L.D.A.T. business architecture analysis technic
- 6) Divided the company in six domains: Processes, organization, location, data, application, and technology (P.O.L.D.A.T.)
- 7) Elaborated the project scoop:
- 8) Created eight goals
- 9) Designed sixteen objectives
- 10) Executed the project sizing grid: Time needed to fix them
- 11) Scaled enterprise analysis activities: Risk of the projects & their respective analysis to be made
- 12) Elaborated the conclusions: Final advice for the company

#### 2) Survey analysis

The analysis from the collected primary data obtained through the survey, is the following:

All the answers to the survey were anonymous and an average of 95 % were favourable towards the development and use of a technological solution to take over most of the company's deficiencies happening at the different domains of the tennis company.

### 3.2 Development

I will be applying a combination of the following management methodologies/approaches (described in chapter 2.1):

#### 3.2.1 Waterfall - SDLC (Approach)

I will use this management approach to manage this case study research, but only partially, mostly the cascade way of analysing each step of this thesis, but I won't be using the same names of each step, because they relate to the development of a creation of a software, and even though I will design a software here on this project, the focus will be the analysis of the deficient processes of this company.

#### 3.2.2 Lean six sigma (Method)

This management approach is exactly what I need to manage this case study research, because it specifically focuses on improvement of a company processes by removing unneeded steps and resources, but I will use its influence only partially, because for this project I will not need any numerical calculation (quantitative research) as this management approach suggested. This thesis work will be qualitative research (only writing, survey, interview, observation, case study data collection).

### 3.3 Theoretical analysis frameworks (Benchmarks)

Applying the theoretical analysis framework/benchmarks (described in chapter 2.3):

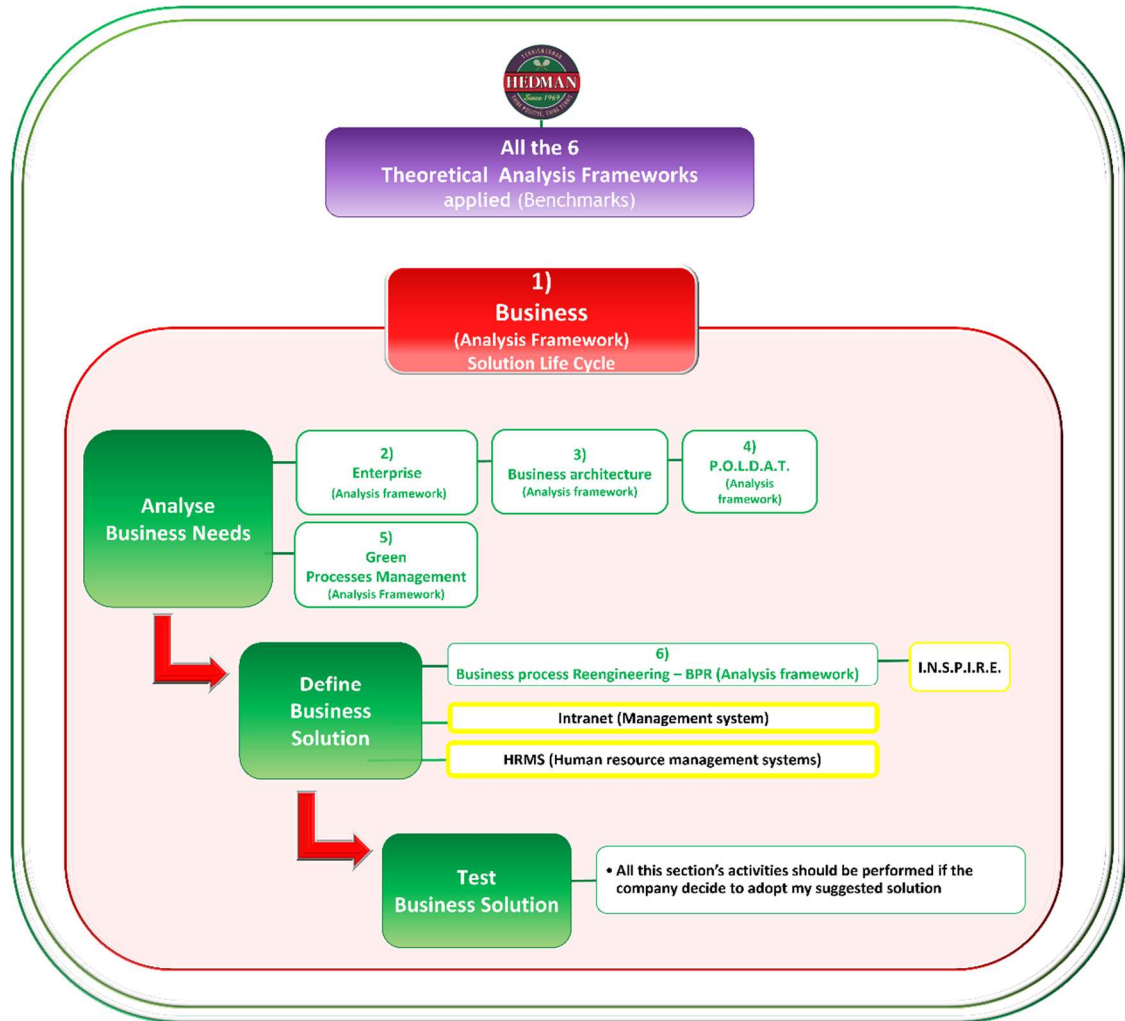


Figure 12 - Frameworks - Theoretical analysis frameworks & other concepts applied

### 3.3.1 Business (Analysis framework)

In this chapter I will be analysing the business/enterprise, following the description from chapter 2, here is the business & enterprise analysis of Hedman Tenniskoulu Oy.

#### 1) Solution life cycle

Following, you will find the steps needed to be able to execute the business analysis framework:

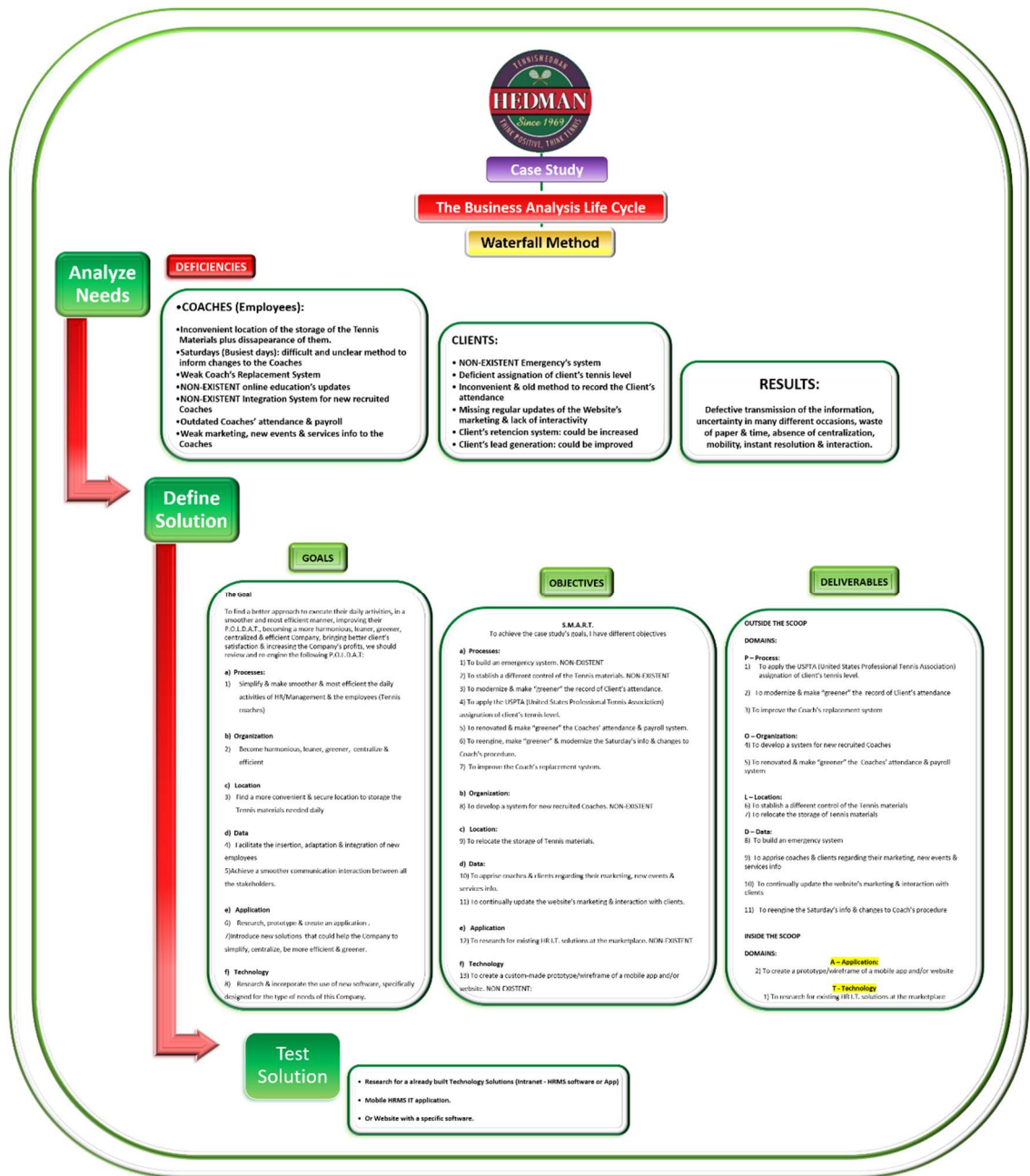


Figure 13 - Frameworks - Business (Analysis framework) - Solution life cycle

a) Analyse business needs

1) Business (analysis framework)

a) Defining and analyzing the stakeholders

The stakeholders are the people involved in this project, from the person in charge of creating it (Natalia C. Mariscal) and the teacher that guide me (Professor Mr. Jouni Takala), to the integrant of this case study, Hedman Tenniskoulu OY.

The stakeholder analysis shows the influence and the interest of this thesis's stakeholders.

## STAKEHOLDERS ANALYSIS

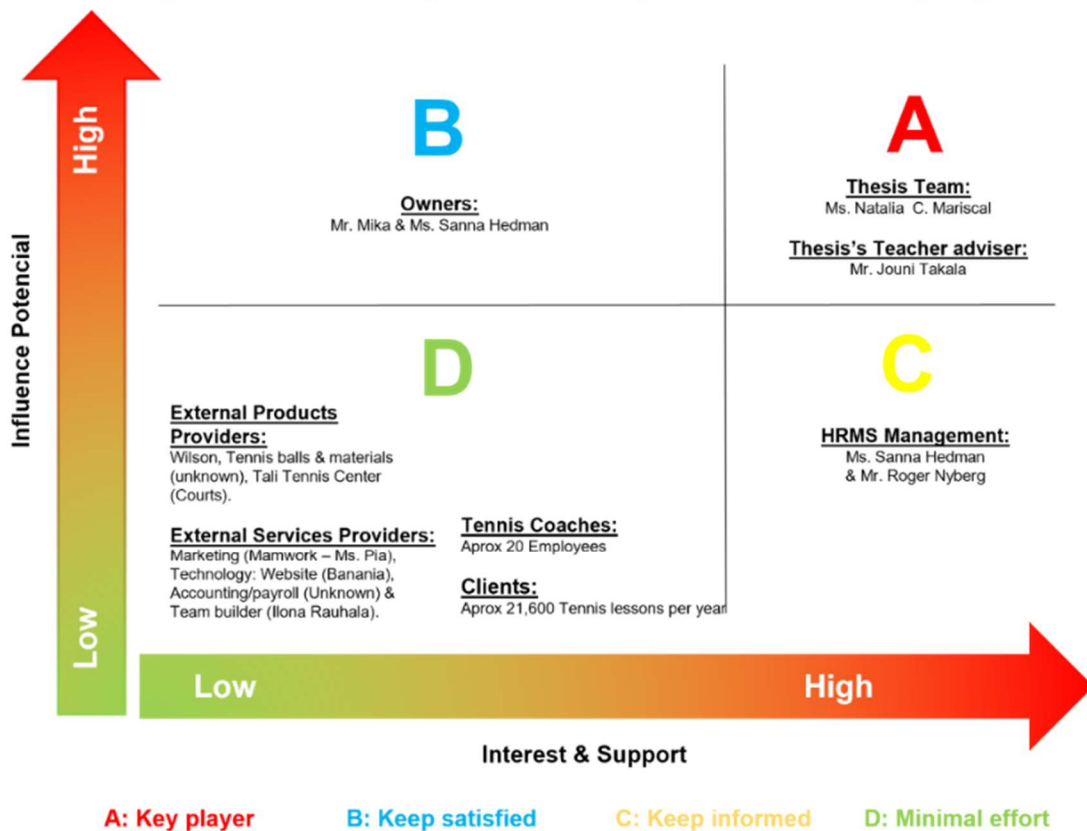


Figure 14 - Analyse needs - Stakeholder analysis

In the following diagram you can see a representation of the subject company, Hedman Tenniskoulu; It reflects a vertical hierarchical organization, with the owners-couple integrated for Mr. Mika Hedman & wife Ms. Sanna Hedman.

Mr. Mika Hedman is the son of the original founder Mr. Heikki Hedman. He is very formal, correct, and firm businessperson. Open to listen new business ideas that could improve his company.

His activities on the company are to make the final decision on every situation, client's acquisition in enterprises and high representant of important companies, in charge and execution of the tennis trips & tennis coach of extremely high-profile clients. He is also in contact with the tennis sponsors, for example: Wilson (external provider), and the tennis tools, as the mini-nets, tennis balls, etc.

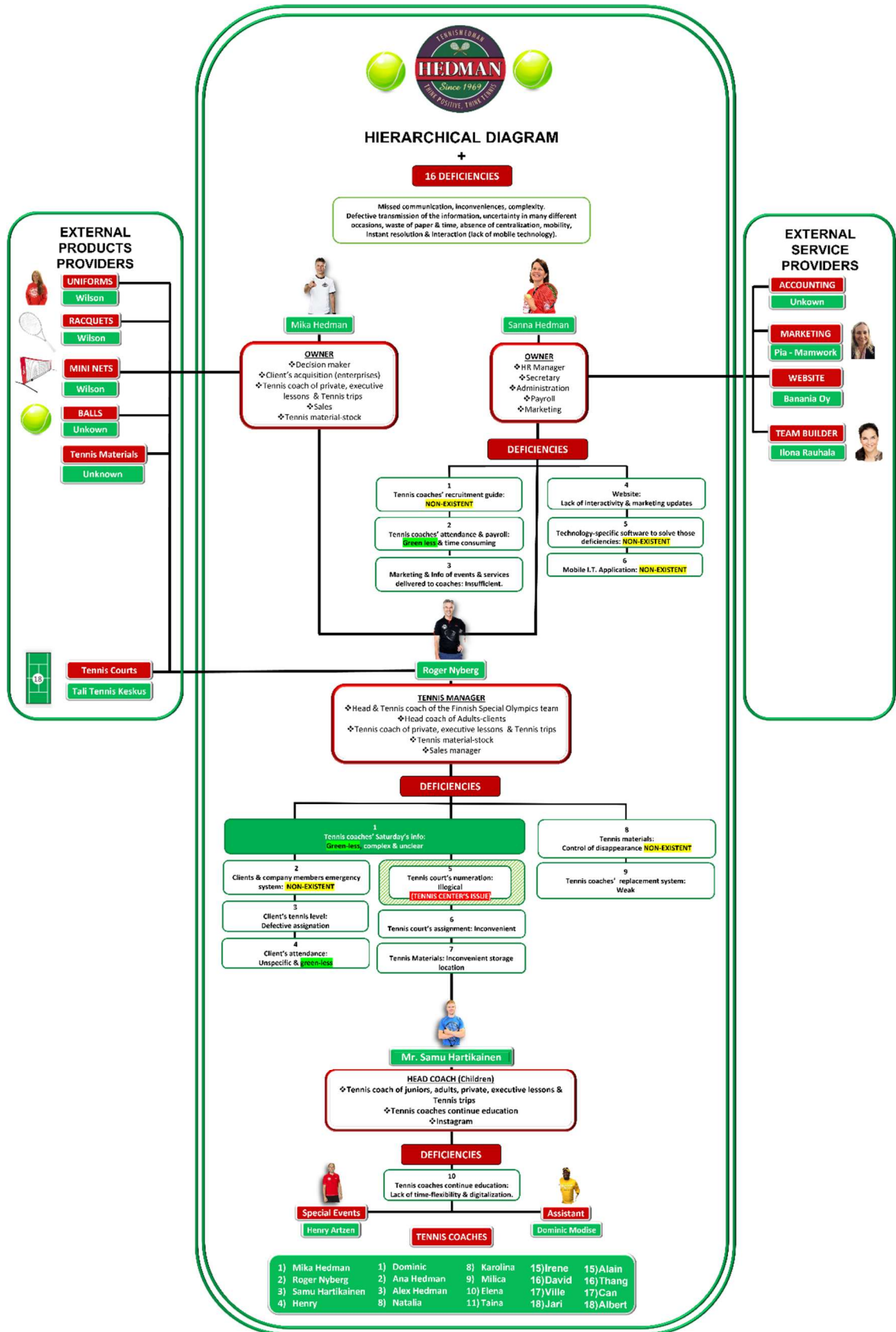


Figure 15 - Analyse needs - Hierarchical organization diagram + deficiencies

Ms. Sanna Hedman is the only woman working at the office, she is kind, warm, friendly, lovely, and performs many activities, not only being owner of the company as well, but also overseeing the human resources, secretary/administration of the company, marketing (external provider: Mamwork - Ms. Pia), technology: Website (external provider: Banania), accounting/payroll (external provider: Unknown) & team builder (external provider: Ilona Rauhala).

Mr. Roger Nyberg is the tennis manager, head coach of the adults-clients, works as well in sales manager, tennis material-stock, tennis trips & also a tennis coach of private lessons and the Finnish Special Olympics team.

He is a kind & friendly gentleman in charge of all the tennis coaches, preparing the schedule of every tennis lesson, coordinating the tennis courts from Tali Tenniskeskus (external provider) with the respective tennis clients (selected by their tennis levels) and choosing who will be the Tennis coach of that group. Also, checks the assistance of each tennis client and partially coordinates the absence and substitution of the approximate 20 tennis coaches that work in the company.

Mr. Samu Hartikainen is also a tennis coach and the youngest person in charge of the children's tennis lessons and the overseeing of the tennis coaches responsible of those lessons, also in charge of the continue education for the tennis coaches.

Mr. Dominic Modise works as a tennis coach and recently has started his activities as assistant of the above mentioned Mr. Hartikainen.

Mr. Henry Artzen works as well as a tennis coach and helps & represents the company in special event, promoting the company as part of the marketing team.

Then comes the approximate 20 tennis coaches that work in the company. We all have direct interaction with Ms Sanna Hedman and either with Mr. Roger Nyberg and/or Mr. Samu Hartikainen.

At the beginning of the tennis season, (from 5<sup>th</sup> of January until 31<sup>st</sup> of May) Ms. Sanna Hedman organize and informs to all the tennis coaches of a quick of party:

- ❖ Usually consist of fun team building activities around the beautiful city of Helsinki.

And on a separated day a main official meeting that we all must assist, and we should wear the company's uniform:

- ❖ Some coaches only receive a t-shirt and the racquets bag, donated from their sponsor: Wilson
- ❖ And some receive the full sports suit, plus the tennis shoes

Usually, in that main meeting, the employees (tennis coaches) are treated very well, and delicious refreshment is served.

Ms. Ilona (external provider) interacts with all the tennis coaches and creates team building activities, to unify and harmonize all the company's goals with the employee's objectives.

At the end of that meeting we receive from Mr. Nyberg the paper list of the assigned tennis lessons for the whole upcoming season, detailing the tennis courts, time, and tennis level of the group.

b) Deficiencies 16: Identifying, listing & describing the sixteen business challenges

After working at the company for many years, unfortunately, I have noticed several easily identifiable deficiencies, from the coaches' point of view, which could be improved.

a) List of the 16 deficiencies:

- 1) Clients & company members emergency system: NON-EXISTENT
- 2) Client's tennis level: Defective assignation
- 3) Client's attendance: Unspecific & green-less
- 4) Tennis coaches' recruitment guide: NON-EXISTENT
- 5) Tennis coaches' attendance & payroll: Green less & time consuming
- 6) Tennis coaches' replacement system: Weak
- 7) Tennis coaches continue education: Lack of time-flexibility & digitalization.
- 8) Tennis coaches' Saturday's info: Green-less, complex & unclear
- 9) Tennis court's numeration: illogical (TENNIS CENTER'S ISSUE)
- 10) Tennis court's assignment: Inconvenient
- 11) Tennis materials: Inconvenient storage location
- 12) Tennis materials: Control of disappearance - NON-EXISTENT
- 13) Marketing & Info of events & services delivered to coaches: Insufficient.
- 14) Website: Lack of interactivity & marketing updates
- 15) Mobile I.T. application: NON-EXISTENT

16) Technology-specific software for those deficiencies: NON-EXISTENT

b) Descriptions of the above listed deficiencies:

I analysed those deficient processes & some of the issues generated were on summary:

- ❖ Missed communication, inconveniences, complexity & unclearness.
- ❖ Defective transmission of the information,
- ❖ Uncertainty on many occasions,
- ❖ Waste of paper (green-less) & time,
- ❖ Absence of centralization, mobility, instant resolution & interaction (lack of mobile technology).

Mr. Roger Nyberg

Under his area are the following nine deficiencies (1 is a deficiency from the Tennis centre):

- 1) Saturday's info to Coaches: Green-less, complex & confusing.

Saturday's morning are the busiest days at Hedman Tenniskoulu. Most of the junior groups are scheduled that day and almost takes over the whole staff of tennis coaches.

The tennis manager is Mr. Roger Nyberg, he arrives earlier than everyone else and separate each basket of balls for each coach, depending on the group tennis level it has, and inside that basket, he put the paper list (4 pages x 20 coaches = 80 pages per Saturday) with everyone's lessons of that day, detailing the following information:

- ❖ Client's birthday (in two columns)
- ❖ Day of the lesson
- ❖ Time of the lesson
- ❖ Coach's name
- ❖ Court number
- ❖ Client's name

Also, it includes:

- ❖ Missing/replacing coaches
- ❖ Clients recovering lessons from other courses or
- ❖ New clients testing the company during only few lessons
- ❖ Plus, it is used to take the client's attendance

The list is usually complex & confusing because it prints all the above information from every one in a table format, but not one line is printed, and it gets confusing & blurring to find our own tennis lessons and clients, between everyone else's information.

Plus, there is so much information that sometimes is hard to assimilate in the few seconds before start working, considering that we all arrive almost on time, we have to be kind and socialize for a little bit while undress the outdoor winter clothes, put on the tennis shoes, get the tennis extra materials plus the tennis baskets and paper list and walk with full hands all the way up the whole tennis centre, to arrive to the back and final destination courts. When the children arrive, they drive us crazy by being full of energy and enthusiasm, but not much time, to unravel that words-puzzle, are left in our brains.

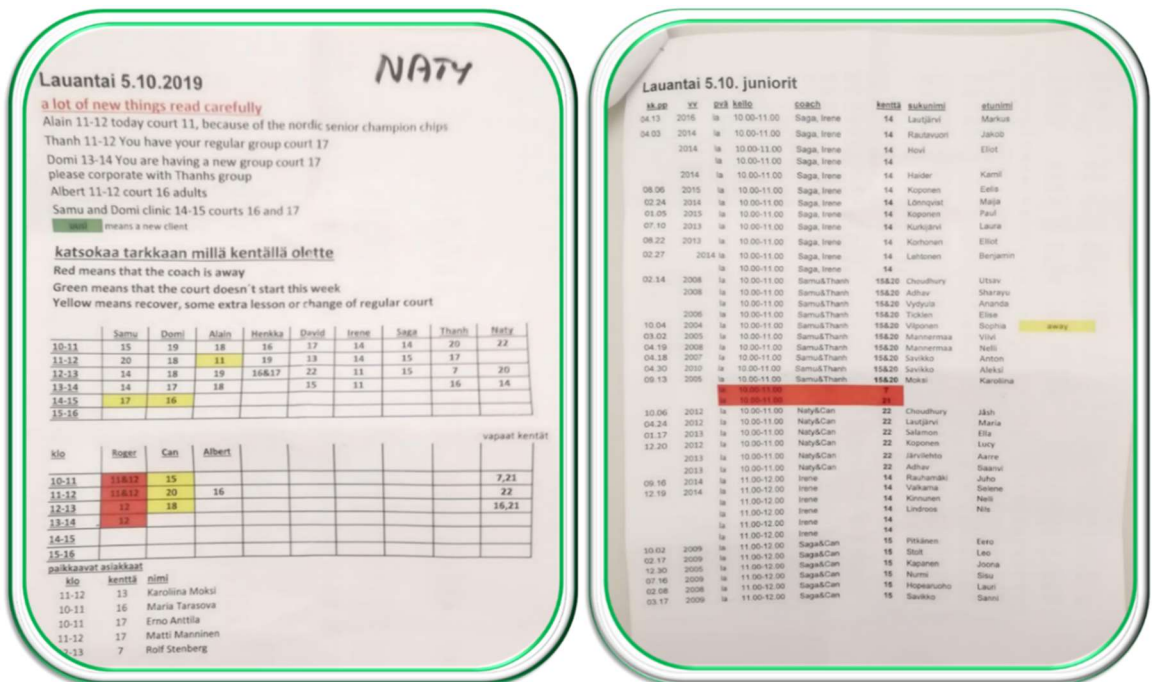


Figure 16 - Analyse needs - Deficiencies: Example of Saturday's tennis lessons

2) Client's tennis level: Defective assignation

Many times, unfortunately, has happened that a tennis client was assigned to a tennis group that was wrong for their Tennis level.

When that happened, the Tennis coach had to continue that tennis lesson until the end, making very hard for the tennis coach to integrate that client, having to manage/balance all the tennis drills and games as best as possible, trying to make as much as possible that his/her difference on the tennis level gets unnoticed, to avoid the unhappiness of the rest of the clients with better tennis level.

This occurs because the tennis manager knows the tennis clients from past tennis seasons, meaning, they are old clients. But when new clients appear, they just get assigned to the tennis groups by only answering few questions.

### 3) Client's attendance: unspecific & green-less

At the beginning of each season, only on those Saturday's mornings, the tennis coaches are required to record the assistance of their tennis clients, but on that paper's list that every coach receives, there is not a designed space where to mark the assistance or not of their Tennis clients or any unexpected walk-in customers.

Many times, we forget the pen or cannot find it inside our huge tennis bag or not have space where to write a comment regarding a client or any specific situation going on at the courts.

### 4) Client's (& company members) Emergency system: NON-EXISTENT

Unfortunately, I have had few emergency situations with some tennis clients, and it surprised me because I realize that I did not know what to do before hand, I did not have a blueprint or methodology to follow in cases like that, plus mine and my clients' nervousness were making everything worst and more nerve wrecking!

It was a Sunday night, around 8pm, in winter, and one of my lady clients, a former Olympian player representing Finland, and at that moment she was an marathonist and an all-sports active player, got injured on the middle of my tennis lesson and twisted her ankle. She was a very tough woman, extremely athletic but now she became a sensitive as a baby and was reacting so fragile and concern.

I reacted as best as I could, but there was a better way, and I did not think of it at that extreme moment, and sadly, it was hard to find help around.

I first made several phone calls, but everyone was busy and did not even answer their phones. Then, I looked for help around me, from other coaches from our company, but they were busy as well...Time was running out, my client was in more pain, and the other very worried and wanted a fast solution so them could continue having the full tennis lesson they paid for.

I ended up leaving the clients alone on the last court of the tennis centre while running as fast as I could to the front desk, located on the completely opposite side of the centre. It took me around 15-20 min to get back on the court with a bag of dry ice, and later the client left with her husband on their car, but had to go jumping on one leg all the way back to the same front desk, where the main door is located...

That client, former Olympic player, also was a doctor, so probably was analysing everything I did wrong at that moment.

I felt so embarrassed with her and the rest of the clients as well, and everyone that saw me running as crazy around the tennis centre.

After this situation, I had other minor cases, but I started bringing my own band-aids to the lessons and I found out that I could ask in advance on the front desk for those bags of dry ice and carry them with me to every lesson, just in case.

Many other situations could occur, for example:

- ❖ High pression
- ❖ Diabetes
- ❖ Allergies to diverse types of medicines or aliments
- ❖ Old surgeries
- ❖ Old injuries
- ❖ Type of blood needed, etc.

##### 5) Tennis court's numeration: illogical (Tennis center's issue)

Tali Tenniskeskus (Tennis center) is in Helsinki, Finland and is the largest in Europe, offering thirty-tree tennis courts, which twenty-two are indoor and eleven outdoor (Tali Tennis center 2019).

This tennis center is very modern and beautiful, but the tennis courts have not numbers in a logical manner, making hard to find the right court without a map, unless you receive a verbal direction to it or simply walk around the center until you will find it.

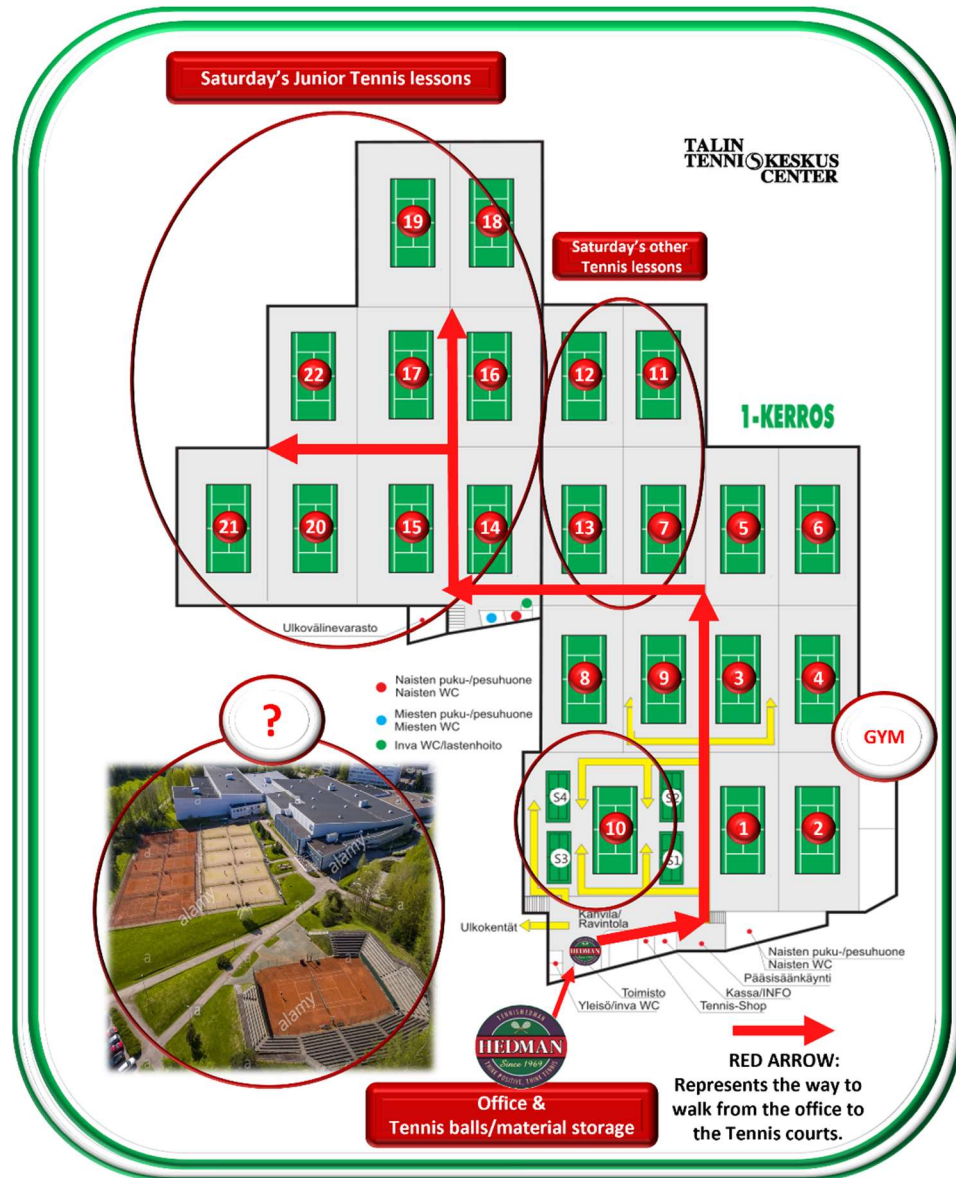


Figure 17 - Analyse needs - Deficiencies: Example of tennis courts' numeration

6) Tennis court's assignment: Inconvenient

The tennis court assignment for the tennis lessons at Hedman Tenniskoulu are in writing handed to the tennis coaches in two occasions during a season:

- At the company's first meeting of the season, the paper's list includes the fixed schedules for the whole full season of every tennis group, with the assigned days, times, tennis courts & coaches.
- Every Saturday mornings/early afternoon.

The problem starts when one tennis coach has several tennis lessons on the same day, one after another, with groups of different tennis level and on different tennis courts, many times, far from each other, making the tennis professional to constantly move between lessons, transporting all his/her own tennis bag, the tennis materials, the tennis baskets (balls) and either cutting earlier a tennis lesson or arriving late to the new one that is far on another court.

Many of those tennis clients clearly show their unhappiness and make the tennis coach to start the lesson with a feeling of guilt, like he/she has done something wrong and now must make up to them.

### 7) Tennis materials: Inconvenient storage location

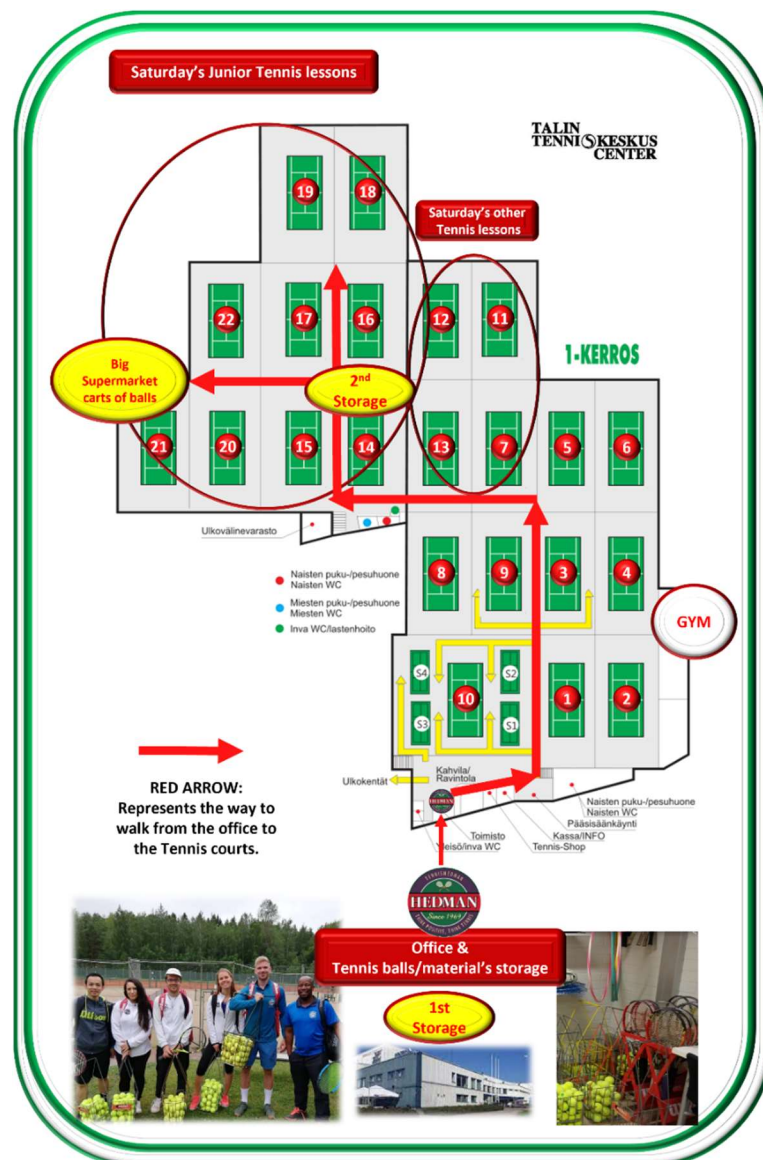


Figure 18 - Analyse needs - Deficiencies: Tennis materials - Storage location

The management of the company have created three main locations of the storage of the tennis baskets (balls) and/or tennis materials, some of them are well equipped or located but all of them have little or big issues that make the process of delivering the tennis lessons inconvenient, deficient, and frustrating for the tennis coaches and the clients.

The storages are:

1) At the company's office: This is the biggest storage they have, but the location cannot be any farther, originating a 5 minutes' walk to the destined tennis court, were the tennis lesson was settled up to be provided, making it very inconvenient for the coach to carry their huge tennis bag, plus 1 or 2 tennis baskets (metallic and very heavy due to the weight originated to the approximated 75 tennis balls that each one is able to hold, hurting their shoulders) and some tennis materials like hula hoops, big balls, cones, etc...

2) At the tennis court 14: It has a lock and only 1 or 2 coaches had the key to open it, and they left it on a secret place in the office.

3) And some courts (between number 14 and 21) have big tennis balls "shopping/supermarket" like, with the largest number of balls but the problems are:

- a) Clients complained because the balls were "old"
- b) All the baskets had their wheels broken
- c) They had a lock and very few coaches had the key to open them.

8) Tennis materials: Control of disappearance - NON-EXISTENT

Unfortunately, the company suffers a silent but constant economical deficit due to the unknown disappearance of their Tennis balls & other elements needed for teaching from their storages.

A method of control of their stock of elements must be used to prevent this situation to continue occurring.

9) Tennis coaches' replacement system: Weak

If a tennis coach has a personal problem, an emergency, falls ill, or is planning a small trip/vacation, he/she will have a double problem, due to the procedure that the company has for this type of situation.

Each tennis coach has the obligation to find their own replacement (other tennis coach, which must be available on that/those specific dates and times).

This procedure becomes extremely difficult when occurs a sudden emergency or sickness (due to the scarcity of time to find the replacement).

Also, for those tennis coaches that were given so many weakly lessons (on different days and hours) become extremely hard to be few days absent due to a sickness, set up a special trip or vacation.

Mr. Samu:

Under his area we can find one deficiency:

10) Tennis coaches continue education: Lack of time-flexibility & digitalization.

The continue education is great tool that this company has for their tennis coaches-employees. But there are several issues to be described:

a) They are many of them, one per month, and unpaid: In most of the cases, the tennis coaches work only part-time for the company, having other jobs, studies, or activities in their time off, making it difficult to assist to the company on court continue education.

A good thing is that sometimes the company had offered as a reward for the assistance some type of refreshment (breakfast or lunch).

b) They are repetitive and very general: Usually all the tennis coaches must assist to those meetings, but in most of them the subjects or explanations described by the instructors in charge are repetitive and they feel are directed to some of the coaches but not to all, giving the sensation of wasting precious time for the rest.

c) The management has said that “the assistance is mandatory for all”: But many coaches have never assisted to them.

d) They feel great as team building activities, but not as effective as continue education, on many occasions.

e) There is a not a physical location where to find the already given information: After the meeting is gone, the information gets lost on the tennis coaches minds and their repetitive tennis routines continue.

Ms. Sanna Hedman:

Under her area are the following six deficiencies:



c) Ms. Sanna, also sends an e-mail to all the tennis coaches as a reminder to complete that form and gives the deadline date of that specific month.

After that date, Ms. Hedman sends all the completed forms to another company, where the accountability and the transfers/deposit of the salaries are executed, by the end of each month.

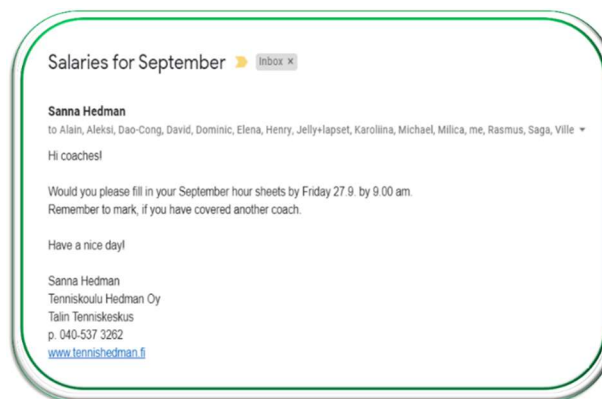


Figure 20 - Analyse needs - Deficiencies: Example of payroll

13) Info & marketing of events & services delivered to coaches: Insufficient.

Weak marketing, new events & services info brought to the coaches, to keep everyone informed and updated and to help the company to promote their own businesses.

The main information system for the coaches is an Information board located on the central office plus verbal information.

Exceptional times, the tennis coaches receive brochures to give to their clients.



Figure 21 - Analyse needs - Deficiencies: Example of information board

#### 14) Website: Lack of interactivity & marketing updates

Hedman Tenniskoulu has a very professional and modern looking website, however it only brings information to the online customers.

It does not have a tool where their daily activities or future events could be display in an attractive manner.

Lacking interactivity as well with their clients, and a more compelling corporate image for their future clients.

HOME | PRODUCTS | TENNIS/HEDMAN | GALLERY | RECRUITMENT | CONTACT

FI | EN

**PROFESSIONAL TENNIS COACH FOR YOU**

**SPEED · FUN · LEARNING**

Whether you are a junior, adult; beginner or expert, we have a suitable group for you.  
Our 20 professional coaches and a broad variety of groups enable you to play on every weekday from mornings to evenings. Tali Tennis Center (Talin Tenniskeskus) is in Helsinki, Pitäjämäki.

WELCOME!

**ILMOITTAUTUMISET LASTEN JA NUORTEN KESÄLEIREILLE ALKANEET!**

Hauskoilla kesäleireillä valmentavat TennisHedmanin ammattivalmentajat! Lue lisää:...

FEBRUARY 8, 2020 | AJANKOHTAISTA

COMPANY TENNIS | JUNIOR TENNIS | WELCOME! | FIT4TENNIS | TENNIS TRIPS

ADULT TENNIS | TENNIS CLINICS | COACHES | RECRUITMENT

OP-Pohjola | TALIN TENNIS KESKUS CENTER | ILMARINEN | Wilson | Kauppalehti | WOLSKO

Figure 22 - Analyse needs - Deficiencies - Hedman Tenniskoulu's website

15) Specific software for those deficiencies: NON-EXISTENT

All the above-mentioned deficiencies that some of the processes of this company have, could be optimized with the help of a specific designed software, which now is not implemented.

16) Mobile I.T. application: NON-EXISTENT

Currently, there are inconvenient situations on some processes, for example:

Defective transmission of the information; uncertainty in separate occasions; waste of paper & time; absence of centralization, mobility, instant resolution & interaction.

A mobile I.T. app, containing the above-mentioned custom-made software could be helping to optimize this company's issues.

c) Modelling the sixteen deficient processes

Entity relationship diagram: This type of models helps to see the transfer of data in the company between the stakeholders and the limitations they have due to the lack of technology solutions (Freeman 2021).

Entity relationship diagram:

They are diagrams that describe how database relate with the entities of the company and their relationships, in a specific domain.



**Entity:** Boxes symbolize entities, for example, the stakeholders.



**Relationship:** Diamonds embody the relationships created between those entities.



**Simple attribute:** Are embodied by ovals and indicate that attributes cannot be subdivided.



**Multi-valued attribute:** More than one attribute

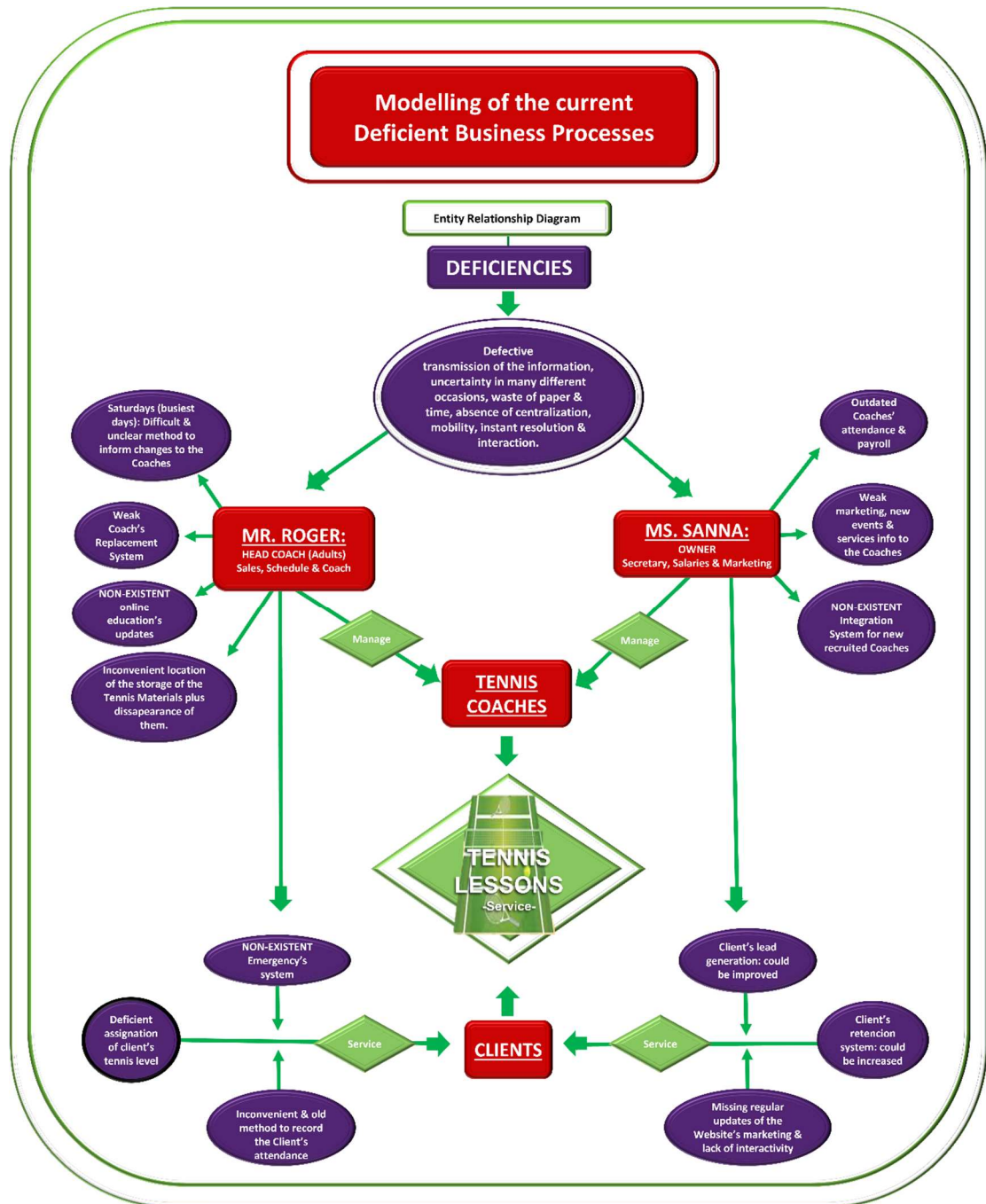


Figure 23 - Analyse needs - Deficiencies: Modelling of the business processes

d) Categorization (maintenance/creation) of the sixteen deficient processes

The categorization process tries to specify which of the deficient processes already exist and needs maintenance to improve them, and which of them do not even exist but would be helpful for the company if they would, and we should create them.

Below you could find the table 3, which details which one of the sixteen deficiencies should be maintained or created from zero.

Table 3 - Analyse needs - Deficiencies: Categorization (creation and/or maintenance)

	Current Deficiencies	Existent Problem	Existent System	Non Existent	Effective	Could be Improve?
1	Clients & company members emergency system: NON-EXISTENT	X	----	X	----	X
2	Client's tennis level: Defective assignation	X	X	----	X	X
3	Client's attendance: unspecific & green-less	X	X	----	X	X
4	Tennis coaches' recruitment guide: NON-EXISTENT	X	----	X	----	X
5	Tennis coaches' attendance & payroll: Green less & time consuming	X	X	----	X	X
6	Tennis coaches' replacement system: Weak	X	X	----	X	X
7	Tennis coaches continue education: Lack of time-flexibility & digitalization.	X	X	----	X	X
8	Tennis coaches' Saturday's info: Complex & unclear	X	X	----	X	X
9	Tennis court's numeration: illogical (TENNIS CENTER'S ISSUE)	X	X	----	X	X
10	Tennis court's assignment: Inconvenient	X	X	----	X	X
11	Tennis materials: Inconvenient Storage Location	X	X	----	X	X
12	Tennis materials: Control of disappearance - NON-EXISTENT	X	----	X	----	X
13	Marketing & Info of events & services delivered to coaches: Insufficient.	X	X	----	X	X
14	Website: Lack of interactivity & marketing updates	X	X	----	X	X
15	Mobile I.T. Application: NON-EXISTENT	X	----	X	----	X
16	Technology-specific software for those deficiencies: NON-EXISTENT	X	----	X	----	X

e) Scaling enterprise analysis activities

Risk of the objectives & their respective analysis to be made. There are certain studies that must be executed depending on the amount of risk of each one of the objectives designed to achieve the company's goals.

The higher risk the investment is, the more rigorous the study will be, to improve their business structure.

Table 4 - Analyse needs - Scaling enterprise analysis activities

	Risk Projects	Enterprise Analysis deliverables:	Objectives
1	High	Full set Business Architecture Feasibility Study Business Case Risk Rating Decision Package	<ol style="list-style-type: none"> <li>1) To build an emergency system.</li> <li>2) To reengine &amp; modernize the Saturday's info &amp; changes to Coach's procedure</li> <li>3) To renovated &amp; make "greener" the Coaches' attendance &amp; payroll system.</li> <li>4) To improve the Coach's replacement system.</li> <li>5) To relocate the storage of Tennis materials.</li> <li>6) To create a custom-made prototype/wireframe of a mobile app and/or website.</li> </ol>
2	Moderate Risk Projects	Modified set: Minimally a full Business Case & some Business Architecture activity	<ol style="list-style-type: none"> <li>7) To modernize &amp; make "greener" the record of Client's attendance.</li> <li>8) Tennis court's numeration: illogical (TENNIS CENTER'S ISSUE)</li> <li>9) Tennis court's assignment: Inconvenient</li> <li>10) To establish a different control of the Tennis materials.</li> </ol>
3	Small Risk Projects	Simplified Business Case & some Business Architecture to provide a context	<ol style="list-style-type: none"> <li>11) To develop a system for new recruited Coaches.</li> <li>12) To apply the NTPR (USTA: United States Tennis Association) assignation of client's tennis level.</li> <li>13) To digitalize the Tennis Coaches', continue education.</li> <li>14) To continually update the website's marketing &amp; interaction with clients.</li> <li>15) To apprise coaches &amp; clients regarding their marketing, new events &amp; services info.</li> <li>16) To research for existing HR I.T. solutions at the marketplace.</li> </ol>

## f) Project sizing grid

Time needed to fix their defective processes. A project sizing grid define the amount of analysis implied prior to suggest a new project for financing.

- a) It will describe the objectives designed by the business analyst (I, Natalia) to achieve the company's goals needed to fix their company's defective processes.
- b) Also, the business analyst will estimate the time each objective will take to be completed.
- c) That will determine what type of risk of achievement will have each objective: Small (green), medium (yellow) or large (red).
- d) That assignation of risk type will include the type of period: Flexible (green); schedule could vary/firm deadline (yellow); fixed (red).

Table 5 - Analyse needs - Time needed to fix each deficiency (Project sizing grid)

	Objectives	Type	Estimated elapsed time	Timeframe	Complexity	Strategic Importance	Level of change	Dependencies
1	To develop a system for new recruited Coaches.	Small	<6 months	Flexible	Easily understood problem & solution. It is achievable	Internal interest only	Impact a single business unit	No major dependencies or inter-related projects
2	To apply the NTPR (USTA: United States Tennis Association) assignation of client's tennis level.	Small	"	"	"	"	"	"
3	To make the Tennis Coaches' Continue Education: Time-flexible through its digitalization.	Small	"	"	"	"	"	"
4	To continually update the website's marketing & interaction with clients.	Small	"	"	"	"	"	"
5	To apprise coaches & clients regarding their marketing, new events & services info.	Small	"	"	"	"	"	"
6	To research for existing HR I.T. solutions at the market-place.	Small	"	"	"	"	"	"

7	To modernize & make “greener” the record of Client’s attendance.	Medium	<6-12 months	Schedule can undergo minor variations, but deadlines are firm	Either difficult to understand the problem, the solution is unclear, or the solution is difficult to achieve	Some direct business impact and/or related to a low priority	Impact a number of business units	Some major dependencies or inter-related projects, but considered low risk
8	To fix the illogical Tennis court’s numeration (TENNIS CENTER’S ISSUE)	Medium						
9	To better assign the Tennis courts to the coaches	Medium						
10	To establish a different control of the Tennis materials.	Medium	”	”	”	”	”	”
11	To build an emergency system.	Large	12-24 months	Deadline is fixed & cannot be changed. Schedule has no room for flexibility	Both problem & solution are difficult to define or understand and the solution is difficult to achieve	Affects core services delivery &/or directly relates to key initiatives	Enterprise impacts	Major high-risk dependencies or interrelated projects
12	To reengine & modernize the Saturday’s info & changes to Coach’s procedure	Large	”	”	”	”	”	”
13	To renovated & make “greener” the Coaches’ attendance & payroll system.	Large	”	”	”	”	”	”
14	To improve the Coach’s replacement system.	Large	”	”	”	”	”	”
15	To relocate the storage of Tennis materials.	Large	”	”	”	”	”	”
16	To create a custom-made prototype/wireframe of a mobile app and/or website.	Large	”	”	”	”	”	”

## 2) Enterprise (Analysis framework)

### a) Business architecture (Analysis framework):

As is described on the chapter 2, the business architecture form part of the six steps enterprise analysis process:

By analysing the P.O.L. domains (Process, organization & location) I completed the business architecture analysis.

By analysing the D.A.T. (Data, application & technology) the entire enterprise architecture analysis was complete.

1) P.O.L.D.A.T. (Analysis framework)

Here I analysed their business challenges with the P.O.L.D.A.T. analysis framework.

I applied it to the deficiencies, allocating them into their respective company's domains.

- a) Deficiencies: 16 (allocated by domains through the P.O.L.D.A.T. analysis framework).

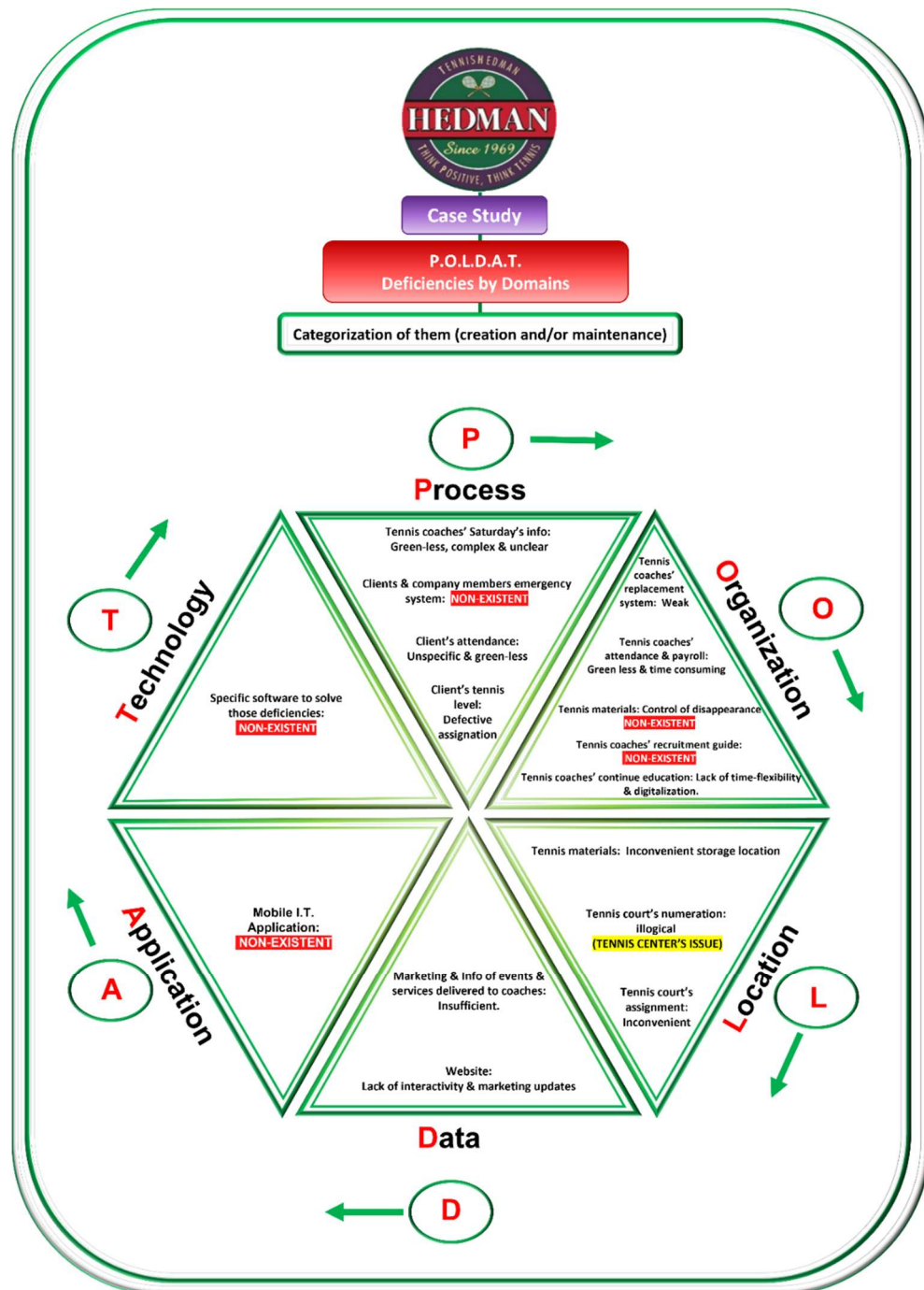


Figure 24 - Analyse needs - Categorization (Architecture) - P.O.L.D.A.T.

P - Process domain

- 1) Saturday's info to coaches: Green-less, complex & confusing
- 2) Client's tennis level: Defective assignation
- 3) Client's attendance: Unspecific & green-less
- 4) Client's (& company members) emergency system: NON-EXISTENT

O - Organization domain:

- 5) HR-Recruitment guide: NON-EXISTENT
- 6) HR-Tennis coaches' attendance & payroll: Green less & time consuming
- 7) Tennis coaches' replacement system: Weak
- 8) Tennis coaches continue education: Lack of time-flexibility & digitalization. Samu
- 9) Tennis materials: Control of disappearance - NON-EXISTENT

L - Location domain:

- 10) Tennis court's numeration: Illogical (Tennis center's issue)
- 11) Tennis court's assignment: Inconvenient
- 12) Tennis materials: Inconvenient storage location

D - Data domain:

- 13) Info & marketing of events & services delivered to coaches: Insufficient.
- 14) Website: Lack of interactivity & marketing updates

A - Applications domain:

- 15) Mobile I.T. application: NON-EXISTENT

T - Technology domain:

- 16) Specific software for those deficiencies: NON-EXISTENT

b) Project scoop

As is described on the chapter 2, the project scoop form part of the enterprise analysis process:

1) Business architecture

2) Project scope

In the project scoop are designed this project's goals & objectives.

The P.O.L.D.A.T. analysis technic was applied as well, dividing them (Goals and objectives) by the six company's domains described before.

1) Goals: 8 (allocated by domains through the P.O.L.D.A.T. analysis framework).

Those deficiencies guided me to set up eight goals to benefit Hedman tennis school. By achieving them, the deficiencies would be correct and optimized their overall functionality & performance. Those are the following:

1) Main goal:

Striving to find a better approach to execute their daily activities, in a smoother and most efficient manner, improving their P.O.L.D.A.T., becoming a more harmonious, leaner, greener, centralized & efficient company, bringing better client's satisfaction & increasing the company's profits, we should review and reengine the following P.O.L.D.A.T:

2) P - Process:

Simplify & make more efficient the daily activities of HR/Management & the employees (Tennis coaches)

3) - Organization:

Become leaner, greener, centralize & efficient.

4) L - Location:

Find a more convenient location to storage the tennis materials needed daily.

5 & 6) D - Data:

Facilitate the insertion, adaptation & integration of new employees.

Achieve a smoother communication interaction between all the stakeholders.

7) A - Application:

Prototype & create an application. Introduce innovative solutions that could help the company to simplify, centralize, be more efficient & greener.

8) T - Technology:

Research & incorporation of new software specifically designed for the type of needs of this company.

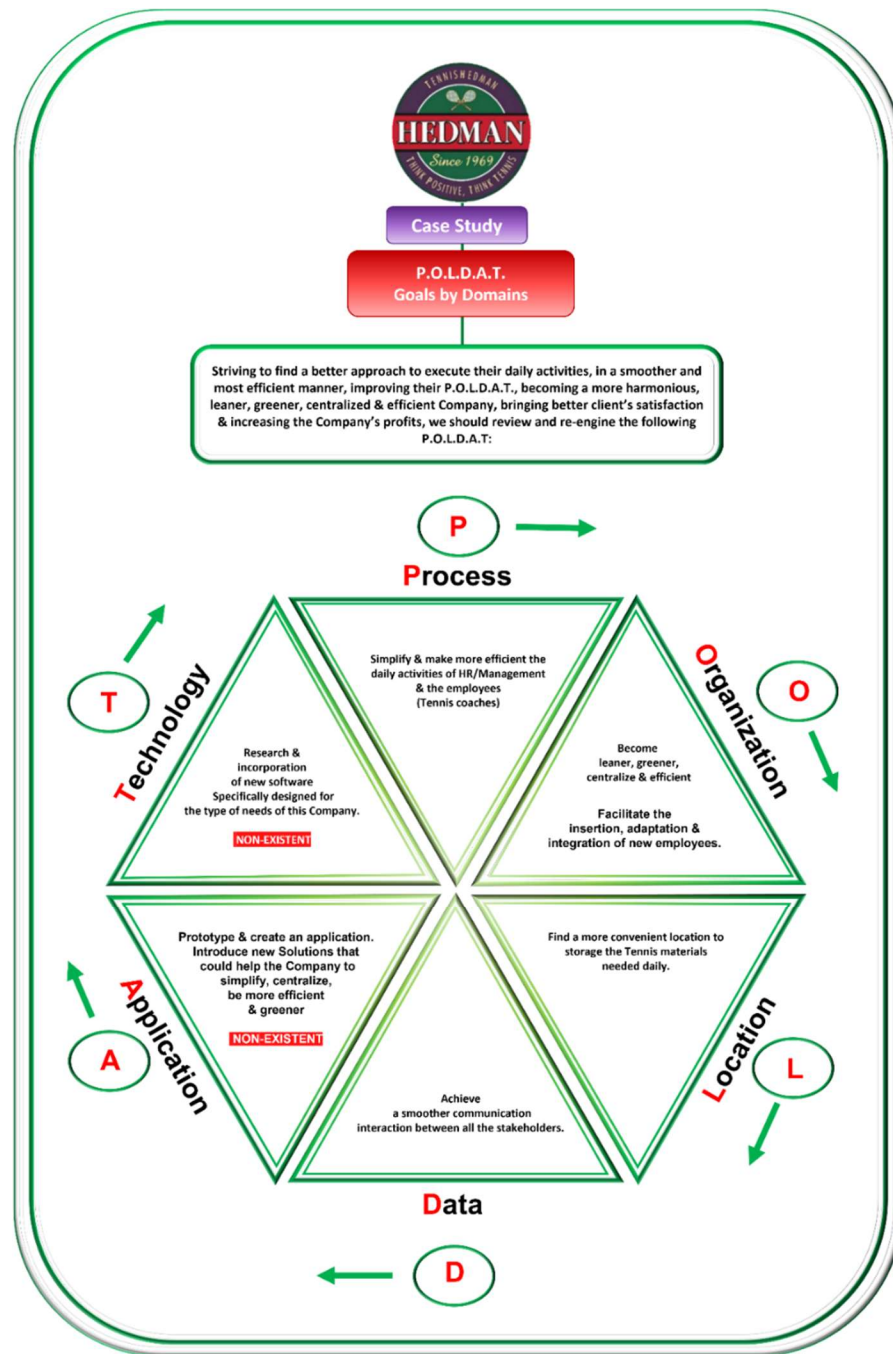


Figure 25 - Analyse needs - P.O.L.D.A.T. Goals by domain

2) Objectives: 16 (allocated by domains through the P.O.L.D.A.T. framework).

From those sixteen deficiencies and the goals wanted for this company, I generate sixteen objectives to be to improve them: Key objectives: (S.M.A.R.T.): To achieve the case study's goals, I have different objectives:

P - Process:

- 1) To reengine & modernize the Saturday's info & changes to coach's procedure
- 2) To build an emergency system.
- 3) To modernize & make "greener" the record of client's attendance.
- 4) To apply the NTPR (USTA: United States Tennis Association) assignation of client's tennis level.

O - Organization:

- 5) To improve the coach's replacement system.
- 6) To renovated & make "greener" the coaches' attendance & payroll system.
- 7) To stablish a different control of the tennis materials.
- 8) To develop a system for new recruited coaches. NON-EXISTENT.
- 9) To digitalize the tennis coaches, continue education.

L - Location:

- 10) To relocate the storage of tennis materials.
- 11) To solicitate to the tennis centre to please re-numbered in a logical manner their tennis courts.
- 12) To design a better system to assign in a more convenient manner the tennis courts.

D - Data:

- 13) To apprise coaches & clients regarding their marketing, new events & services info.
- 14) To continually update the website's marketing & interaction with clients.

A - Application:

15) To create a custom-made prototype/wireframe of a mobile app and/or website: NON-EXISTENT.

T - Technology:

16) To research for existing HR I.T. solutions at the marketplace: NON-EXISTENT.

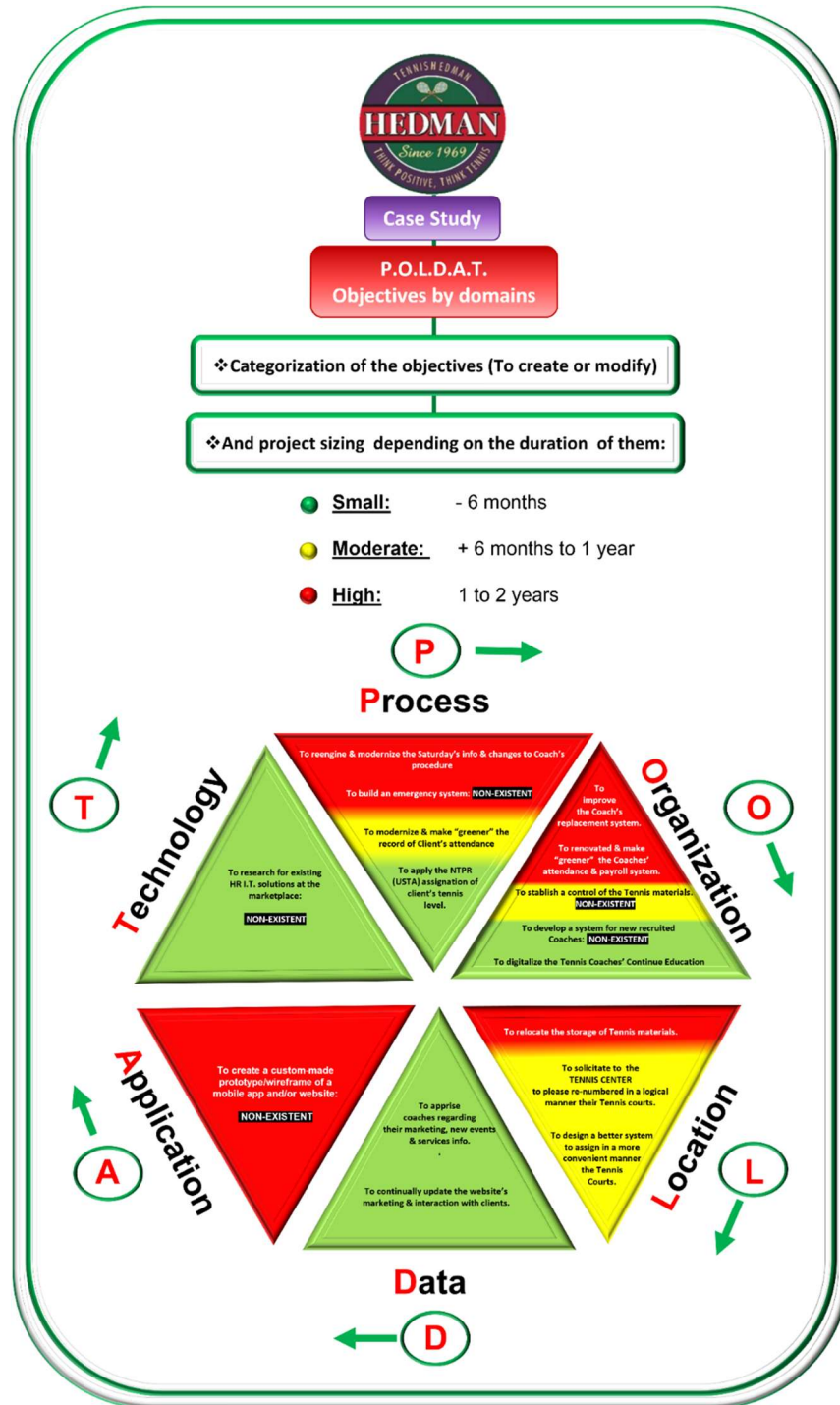


Figure 26 - Analyse needs - P.O.L.D.A.T: Objectives, categorization, project sizing

3) Deliverables: 2 (allocated by domains through the P.O.L.D.A.T. analysis framework).

I have planned two deliverables' activities for the company:

1) Technology domain:

- ❖ Deficiencies: NON-EXISTENT Specific software for those deficiencies
- ❖ Deliverable: To research for existing HR I.T. solutions at the marketplace

2) Application domain:

- ❖ Deficiencies: NON-EXISTENT Mobile I.T. application
- ❖ Deliverable: To create a prototype of a mobile app and/or website

Allocated by domains through the P.O.L.D.A.T. framework:

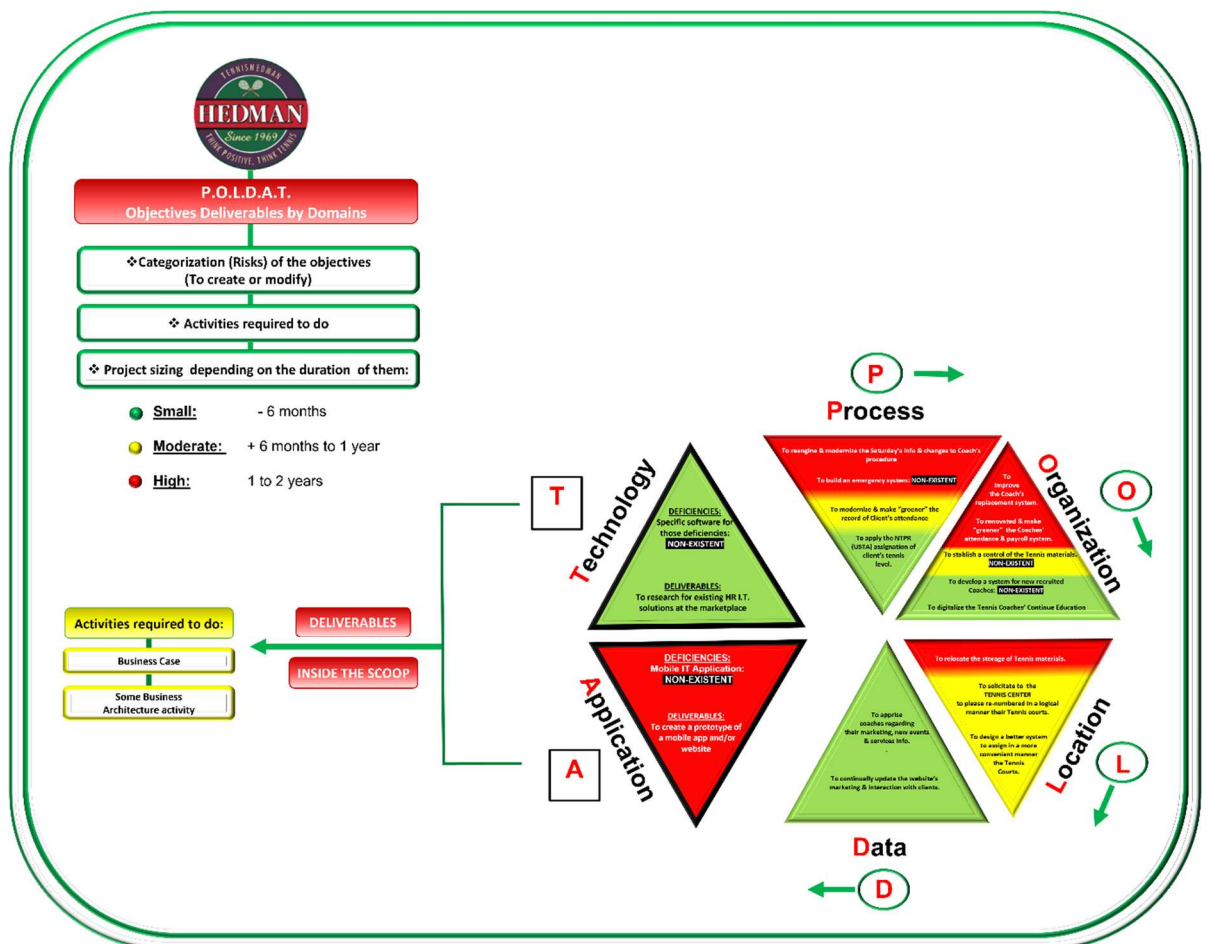


Figure 27 - Analyse needs - P.O.L.D.A.T: Deliverables for the company: 2

### 3) Green processes management (analysis framework)

Here I will be applying the above mentioned theoretical analysis framework/benchmarks (described in chapter 2.3.3):

I have utilized this process management as a framework analysis inspired by the book of Mr. Samuel Windsor "Introduction to green process management."

#### a) Description - Synthesis

A brief conclusion about it would be:

A company could save money while being socially responsible.

There is no need to become a certified company under the ISO standards, because executing and informing about the carbon measurement calculations required are not as simple as it should. But the company could still help the planet and its surrounding ecosystem by designing and executing a plan of certain activities that will also diminish their expenses.

#### b) Green walks - Questions

Employees could help and try to reduce waste and save money by doing "green walks."

They could ask:

1. "How can waste be reduced?"
2. What areas of the business use more energy than necessary?
3. Can lights be turned off?
4. Can water usage be reduced?
5. **Can less paper be used?**
6. **What can be reused? Packaging material, pallets, printer paper?**
7. Are all disposable items disposable? Or can they be recycled or reused?
8. Can recycle bins replace bins, and employees separate rubbish to reduce landfill waste?"

#### c) Actions to become a greener company

Below you could find the exact list suggested by the author of the book "Introduction to green process management," Samuel Windsor, which I used as framework analysis (Benchmark) for this Thesis.

The list suggests twenty-two actions that would help the company to be greener:

1. "Switch from incandescent to fluorescent bulbs.
2. Turn off computers at night and when not in use; use motion sensors for lights.
3. Use waste as fuel.
4. Combine shipments.
5. Separate rubbish from recyclables.
6. Recycle or reuse packaging.
- 7. Require all suppliers and customers (if possible) to send invoices, packing slips, and other documentation by e-mail.**
- 8. Reduce employee travel, use remote conferences, begin telecommuting.**
9. Investigate energy efficiency when buying electronics and other equipment.
10. Reduce water usage by installing low-flow toilets or using rainwater in certain manner.
- 11. Reduce unnecessary employee commutes; encourage ride sharing.**
- 12. Get rid of unnecessary paper and materials.**
13. Utilize more natural lighting.
14. Use green cleaning supplies.
15. Replace the water cooler with filtered water.
17. Travel green by using the train, if possible, and try to find a green hotel.
18. Stay in for lunch and reduce those extra miles driven.
- 19. Refuse paper advertising and force suppliers to provide information in a digital format.**
- 20. Get rid of the filing cabinet to save space and paper; scan and file documents electronically.**
21. Change filters on HVAC equipment regularly.
22. Purchase items in larger containers to reduce packaging waste".

d) Linking objectives to projects

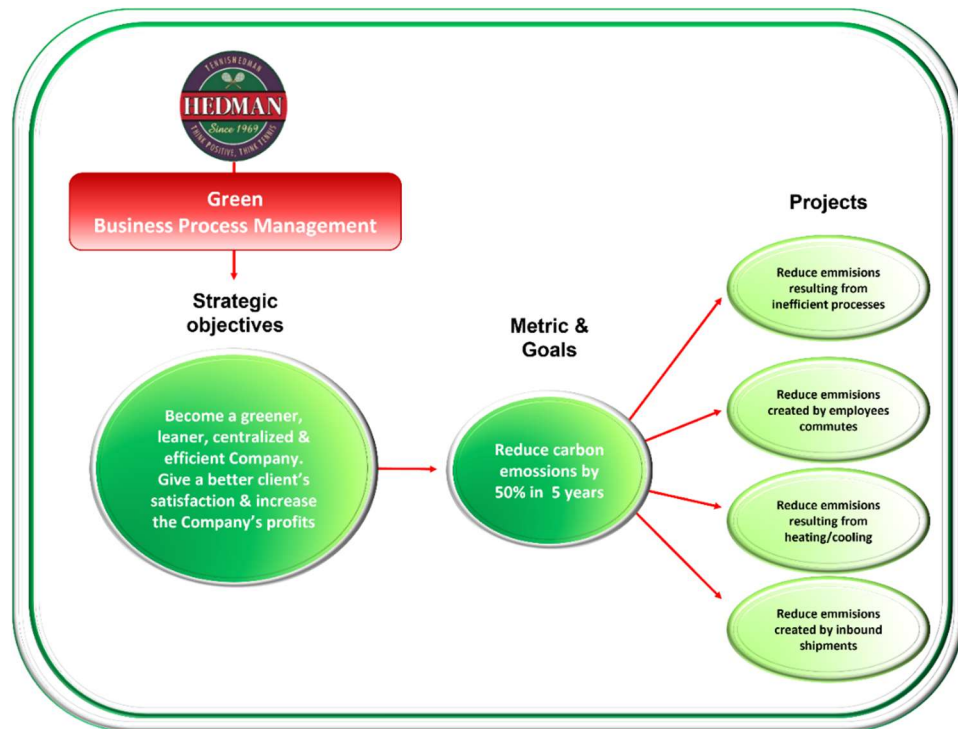


Figure 28 - Analyse needs - Green business processes management

e) Control plan - Green business processes management applied to Hedman Tenniskoulu

Table 6 - Analyse needs - Green business processes management - Control plan

	Aspect	Control and improvement methods
	<b>Office waste</b>	
1	Office paper (Saturday's Tennis info for Coaches)	Implement recycling program (or replacement with a digital solution)
2	Marketing paper	Implement recycling program (or replacement with a digital solution)
3	Toner cartridges	Implement recycling program
4	Total residual waste	Implement recycling program
5	Fluorescent light bulbs	Governed by universal haz waste rules. Handled using Haz Waste process.
6	Heating	Implement project to reduce energy usage
7	Inbound shipments	Implement project to reduce amount of orders  "Calculate: determine the weight of the shipments received and the distance the shipments had to travel."
8	Employee's commutes	Implement incentives to car pool
	<b>Tennis materials waste</b>	
9	Old Tennis balls	Implement recycling program
10	Empty Tennis tubs	Implement recycling program
11	Empty boxes	Implement recycling program
12	Broken Tennis carts	Implement recycling program
13	Old/broken Tennis rackets	Implement recycling program
14	Old Tennis shoes	Implement recycling program

## 2) Define business solution

### 1) Business process reengineering - BPR (Analysis framework):

Here I will be applying the above mentioned theoretical analysis frameworks/benchmarks (described in chapter 2.3.4) by executing the following steps:

#### a) BPR Framework: "I.N.S.P.I.R.E." - Execution

- 1) I - Initiate: This thesis - Case study research about Hedman Tenniskoulu
- 2) N - Negotiate: Got the management's approval
- 3) S - Select: Processes that need to be reengineered.

Because of their defective business processes, I identified 16 deficiencies that could be sintetized as the following:

Defective transmission of the information, uncertainty in many different occasions, waste of paper & time, absence of centralization, mobility, instant resolution & interaction.

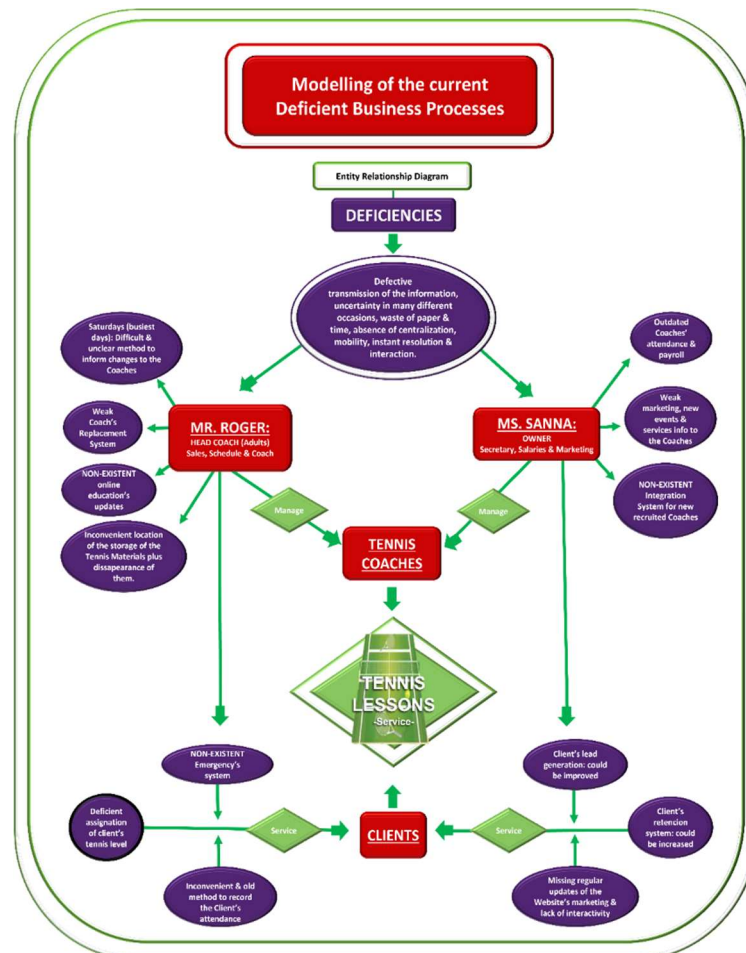


Figure 29 - Define needs - BPR (Analysis framework) - S - Select the processes to be fix

4) P - Plan: Objectives created for each deficient process

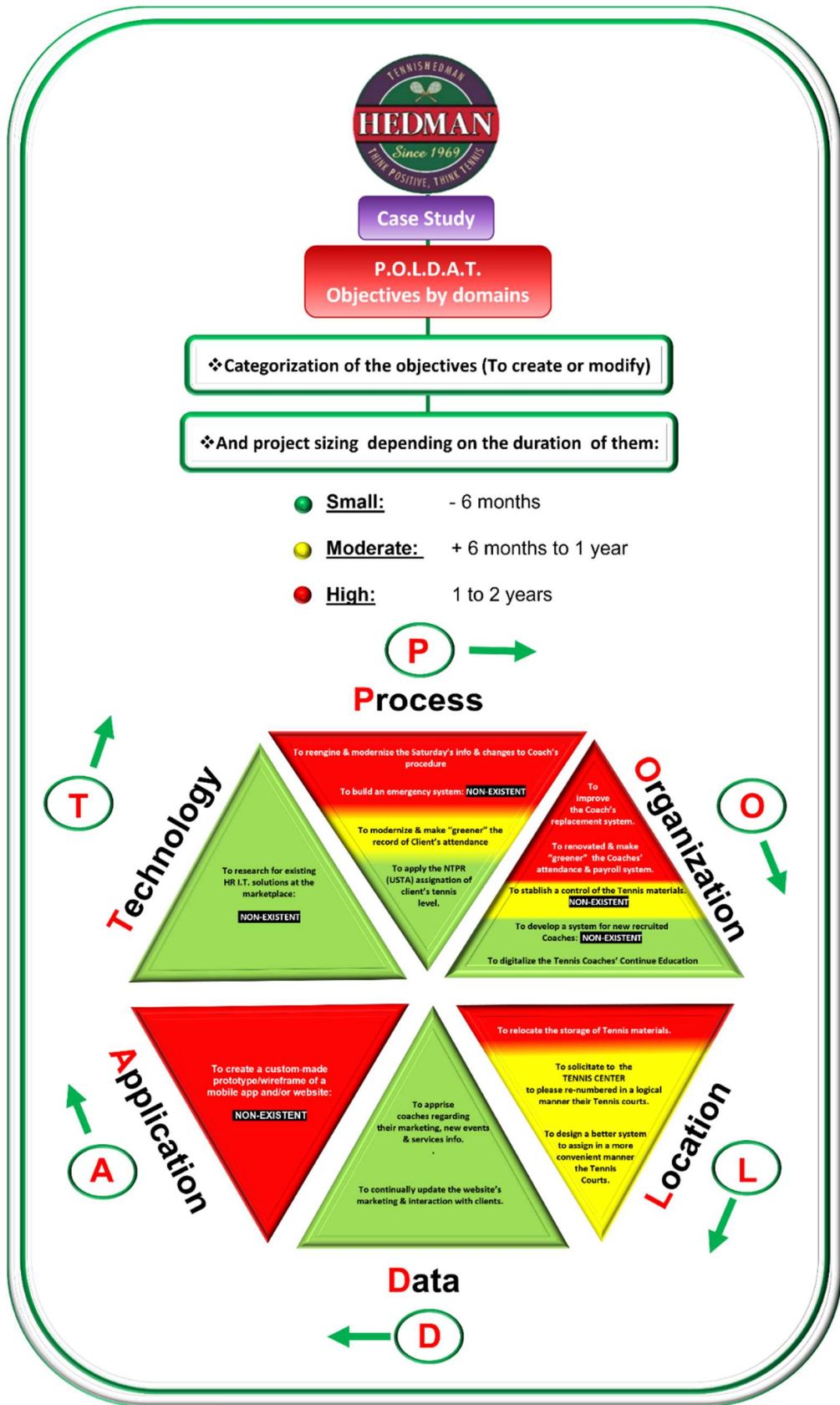


Figure 30 - Define needs - BPR (Analysis framework) - P - Plan the objectives to fix issues

I - Investigate: The processes and analyse the problems.

Due to those deficiencies, I developed 8 goals, which could be simplified into the following:

To find a better approach to execute their daily activities, in a smoother and most efficient manner, improving their P.O.L.D.A.T., becoming a more harmonious, leaner, greener, centralized & efficient company, bringing better client's satisfaction & increasing the company's Profits.

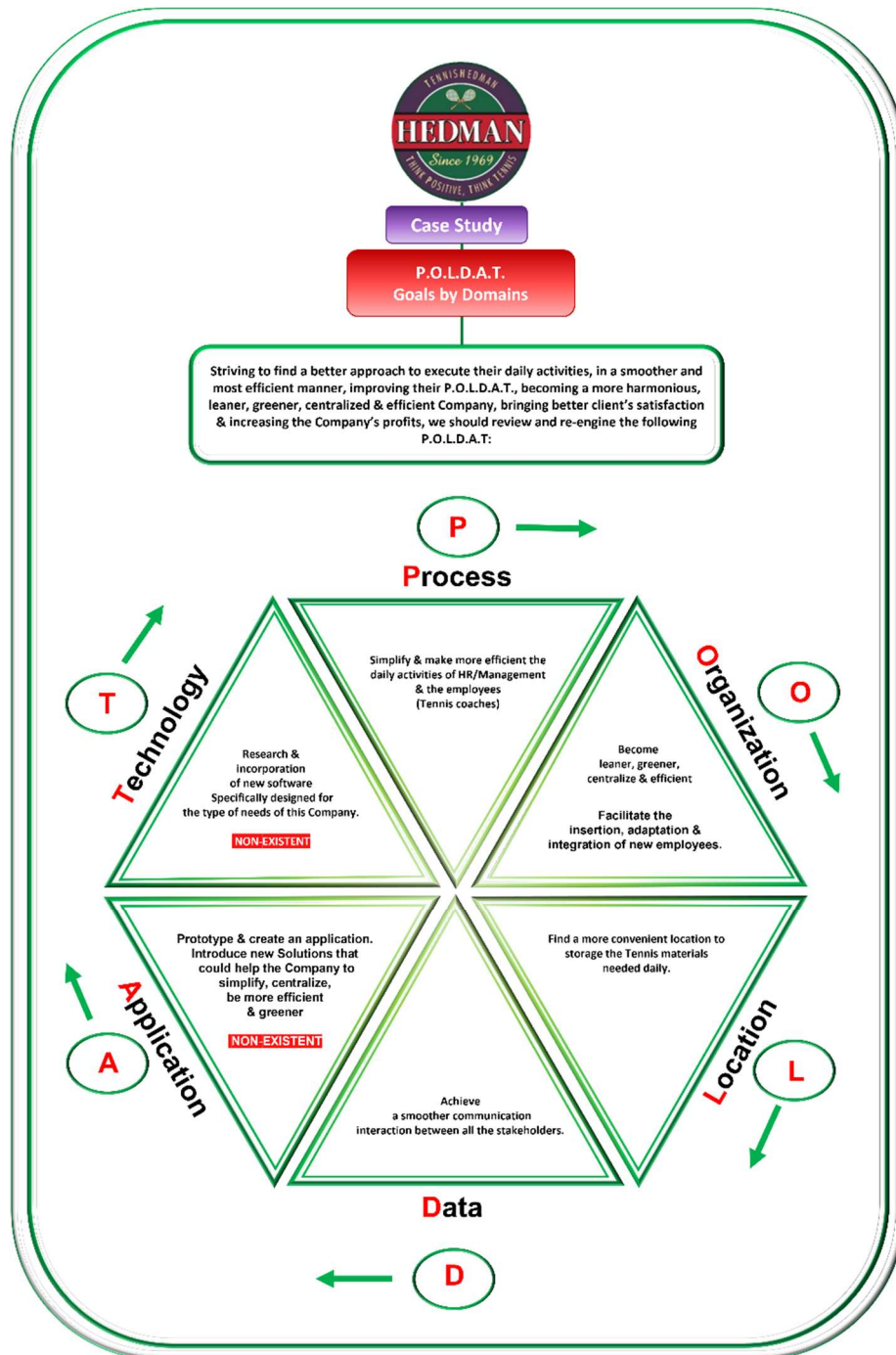


Figure 31 - Define needs - BPR (Analysis framework) - I - Investigate the processes

- a) R - Redesign: Selected processes to improve the performance

After applying the different analysis frameworks, described in chapter 2, I developed a suggestion of a solution to their problems that will be:

To reengineering those defective business processes (P.O.L.D.A.T. company's domains), trying to centralize all of them and their consequent solutions into one mobile app - HRMS (Human resources management system-Intranet mobile app).

I will deliver (Deliverables) on this thesis (Case study research) the following two objectives:

- 1) To research for existing HR I.T. solutions at the marketplace (Investigate).
- 2) To create a custom-made prototype/wireframe of a mobile app and/or website, which would represent the technological solution this company needs (Redesign).

Execution of the two deliverables-objectives:

- 1) To research for existing HR I.T. solutions at the marketplace:
  - a) Intranet - Examples of Intranet business solutions available to acquire:

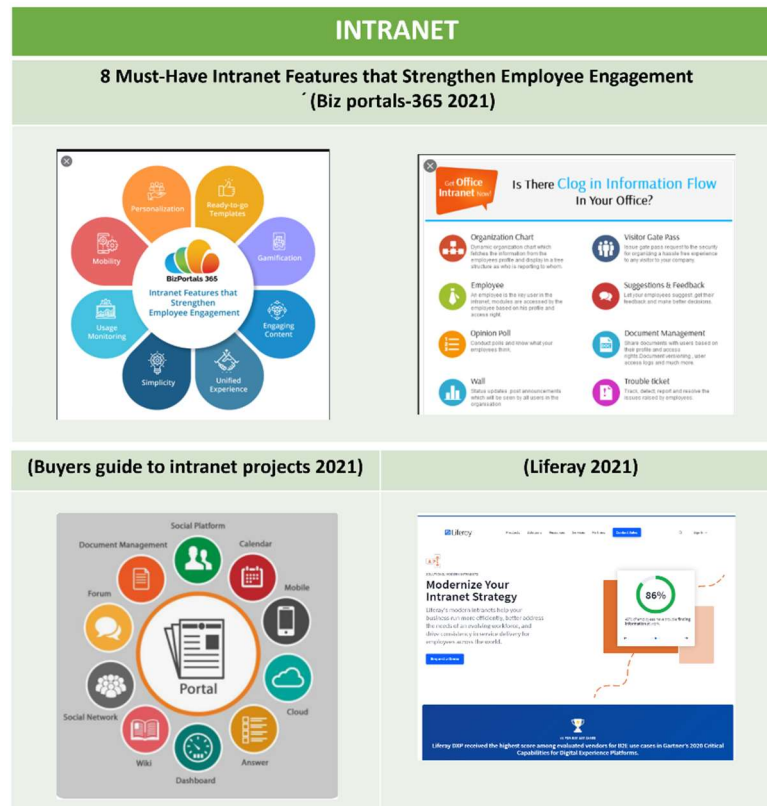


Figure 32 - Define needs - BPR (Analysis framework) - I - Investigate - Intranet

b) HRMS - Human resource management systems

Examples of HRMS - Human resource management systems available to acquiree:

## HRMS

### Human resource management systems


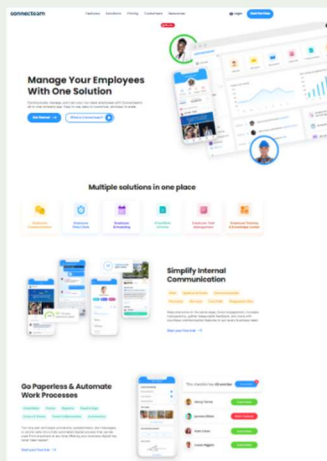
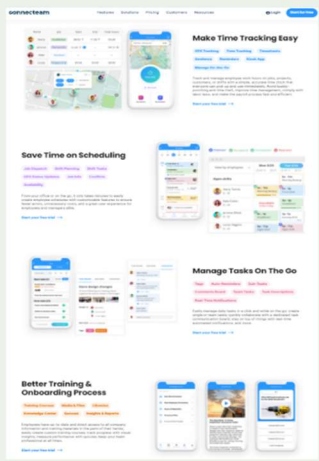
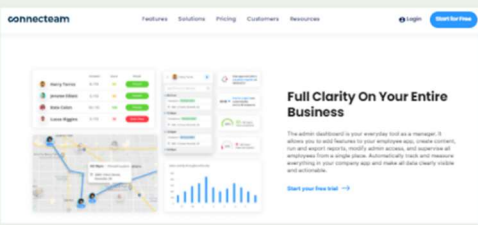
(Kiss flow. 2021)	(Trust radius. 2021)
<div style="border: 1px solid #ccc; padding: 10px;"> <p><b>Top 5 employee management software solutions</b></p> <p>Selecting the right employee management software is a challenge since there are a number of tools in the market. To help you select with a selection process, we have put together a list of top 5 employee management solutions that are available on the market.</p> <p><b>1. Zoho People</b></p> <p>Zoho People is an employee management software that lets HR managers and business owners streamline their employee-related activities. This tool can help you manage employee onboarding, timecards, leave performance, benefits, and personal details.</p> <p>There are several templates that you can use to customize according to your business and HR requirements. Through this tool, you can manage various HR tasks efficiently.</p> <p>Zoho People integrates with many tools like Slack, Asana, Jira, and Google along with other Zoho products. But if you have a custom workflow, you can integrate with the tool, then it might save on programming.</p> <p>Zoho People can cater to employees. This can make the HR department a better place for the growing companies of any size. It helps employees because they can easily have to use a different amount of any month.</p> <p>Overall, Zoho People is a solid employee management software that is more suitable for small businesses.</p> <p><b>2. Kissflow HR Cloud</b></p> <p>Kissflow HR Cloud manages all the HR processes through a single platform. It allows organizations to offer a better employee experience and help them improve employee retention and bring down the cost of hiring and onboarding.</p> <p>The simple, consistent, and intuitive tool lets you manage all the HR activities including:</p> <ul style="list-style-type: none"> <li>• Talent acquisition management</li> <li>• Employee management</li> <li>• Timecard and attendance</li> <li>• Leave management</li> <li>• Performance management</li> <li>• Onboarding and offboarding</li> </ul> <p>The tool helps HR managers to use the HR processes with less time and effort. HR managers can create a workflow for their HR processes and start benefiting from the features of Kissflow HR Cloud right from day one.</p> <p>A powerful, self-service HR solution, Kissflow HR Cloud is available to provide your business with the best HR management solution. The tool also provides HR analytics and reporting, giving you the ability to gain clear insights into your HR processes and help you optimize your operations.</p> </div>	<div style="border: 1px solid #ccc; padding: 10px;">  <p><b>HR Management Software</b></p> <p>HR Management Software includes:</p> <ul style="list-style-type: none"> <li>• All-in-One HR Software (HRIS)</li> <li>• Talent Acquisition</li> <li>• Time and Attendance</li> <li>• Performance Management</li> <li>• Onboarding</li> <li>• Self-Service HR</li> <li>• Payroll</li> <li>• Compliance</li> <li>• Analytics and Reporting</li> </ul> </div>
<p><b>(Connect team. 2021)</b></p>	
<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;">  <p><b>Manage Your Employees With One Solution</b></p> <p>Multiple solutions in one place</p> <p>Simplify Internal Communication</p> <p>Go Paperless &amp; Automate Work Processes</p> </div> <div style="width: 48%;">  <p><b>Make Time Tracking Easy</b></p> <p>Save Time on Scheduling</p> <p>Manage Tasks On The Go</p> <p>Better Training &amp; Onboarding Process</p> </div> </div> <div style="margin-top: 20px;">  <p><b>Full Clarity On Your Entire Business</b></p> <p>The ability to track your entire business in one place is a game-changer. It allows you to see the big picture of your business, from sales to expenses, and make data-driven decisions that will help you grow and succeed.</p> </div>	

Figure 33 - Define needs - BPR (Analysis framework) - I - Investigate - HRMS

c) HRMS - FREE Apps

# HRMS Human resource management systems FREE Apps

(Blog Capterra 2021)

	Zoho People	OrangeHRM	WebHR	People
Overall user rating	4.0	4.1	4.2	4.0
Upgrade cost (excluding discount)	\$69/month	\$0	\$2/user/month	\$1/user/month
Free users	12	Unlimited	5	5
Open source		✓		
Mobile app	✓	✓	✓	✓
Free plan includes recruiting	✓	✓		

#### 4. Zoho People

Zoho People is a cloud-based HR solution that's suited for businesses of all sizes. Its free version lets you add up to five employees and includes an employee database, self-service features, onboarding, and leave management.

##### Pros

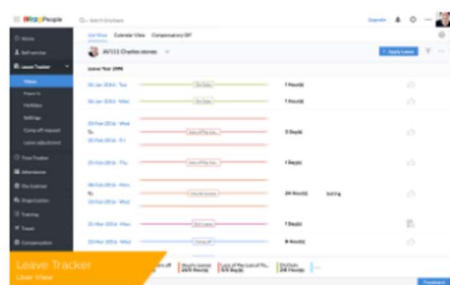
Capterra reviewers find Zoho People's HR modules easily customizable. For instance, you can add data fields, customize employee forms, and modify recruiting workflows.

##### Cons

Some reviewers say that the mobile app's interface is complex and needs an upgrade. They have difficulty navigating the app and searching for information.

**Cost to upgrade:** The Essential HR package starts at \$1 per employee, per month. Paid features include attendance tracking, time sheets, shift scheduling, performance management, and employee query management.

**Highly rated by:** In 2018 and 2019, 83% of reviews came from small businesses (fewer than 200 employees). Top industries were IT services and software technology.



Leave tracking in Zoho People (Source)

#### 2. OrangeHRM

OrangeHRM is an HR solution that works well for small and midsize businesses and is available in two versions: cloud-based and open source.

The open source version is available for free and includes employee records, leave management, time and attendance management, recruiting, performance management, expense tracking, compliance management, and document management functionalities.

##### Pros

Capterra reviewers find the recruiting functionality of the open source version useful as it helps them design hiring workflows from posting a job vacancy to issuing an offer letter. They also say the product helps them easily manage organizational changes such as department transfers, promotions, and hierarchy changes.

##### Cons

Some reviewers mention that the lack of payroll integration is a disadvantage as they have to manually move employee records from the HR system.

**Cost to upgrade:** The open source version is completely free. The cloud-based version is paid.

**Highly rated by:** From 2018 to 2019, 56% of reviews came from small businesses (fewer than 200 employees), while the remaining 44% came from midsize businesses (201 to 1,000 employees). Top industries were IT services and automobile.



Candidate assessment in OrangeHRM (Source)

## HRMS

### Human resource management systems

### FREE Apps

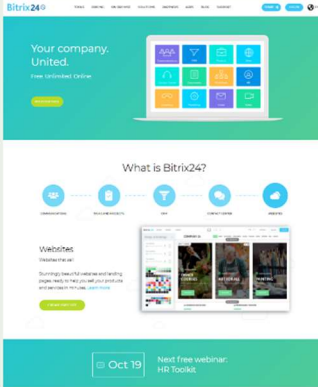
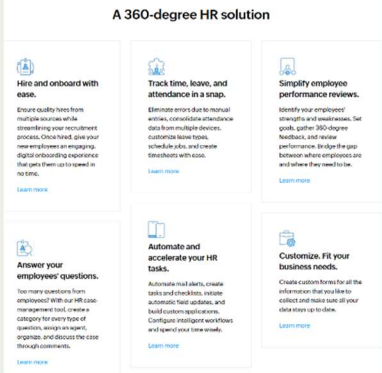
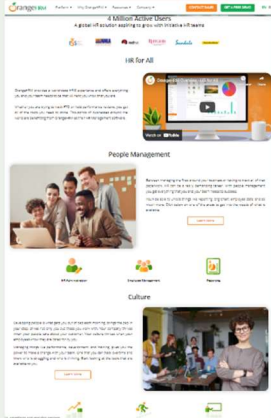
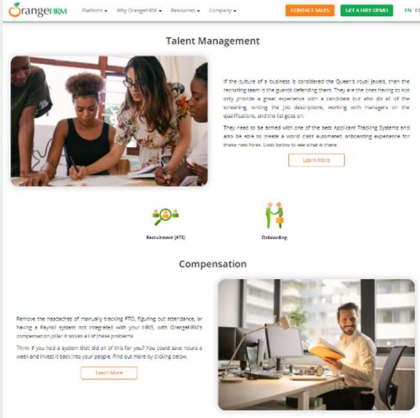
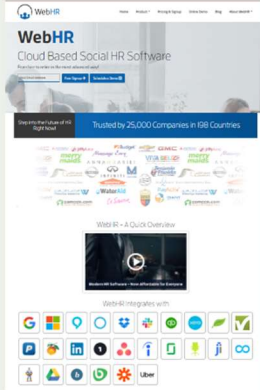
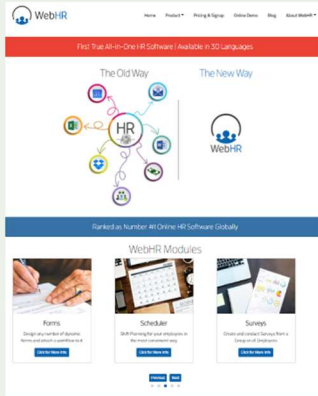
<p><b>(Bitrix-24 2021)</b></p> 	<p><b>(Zoho People 2021)</b></p> 
<p><b>(Orange HRM 2021)</b></p> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%;">  </div> <div style="width: 45%;">  </div> </div>	
<p><b>(Web HR 2021)</b></p> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%;">  </div> <div style="width: 45%;">  </div> </div>	

Figure 34 - Define needs - BPR (Analysis framework) - I - Investigate - HRMS - FREE Apps

- 2) The second delivery objective from this thesis work is: To create a custom-made prototype/wireframe of a mobile app and/or website, which would represent the technological solution this company needs.

I developed a wireframe and a prototype of it into two versions: mobile app <https://marvelapp.com/prototype/676ha3f> and website <https://tennishedman.wordpress.com/>, to try to represent in a graphical manner the technological solution this company needs. But due to the excessive extension of this thesis work, I won't be able to detail them at the moment.

Following, you will find a graphic representation of the reengineering process suggested to optimize their deficient business processes and explaining how the suggested technological solution would work, centralizing all the problems I identified and giving solutions to each one of them.

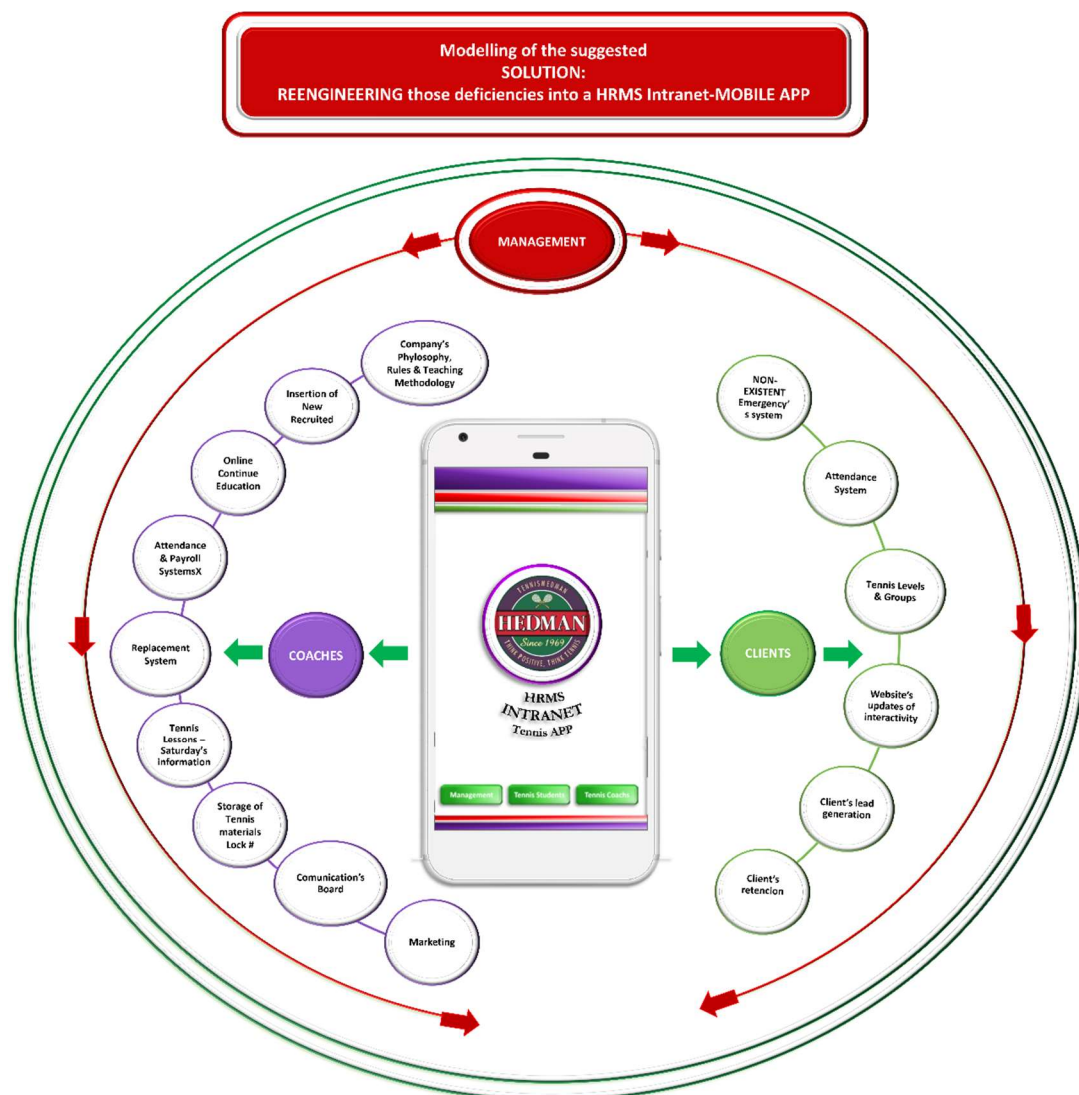


Figure 35 - Define needs - BPR (Analysis framework) - R - Redesign: Selected processes to improve the performance

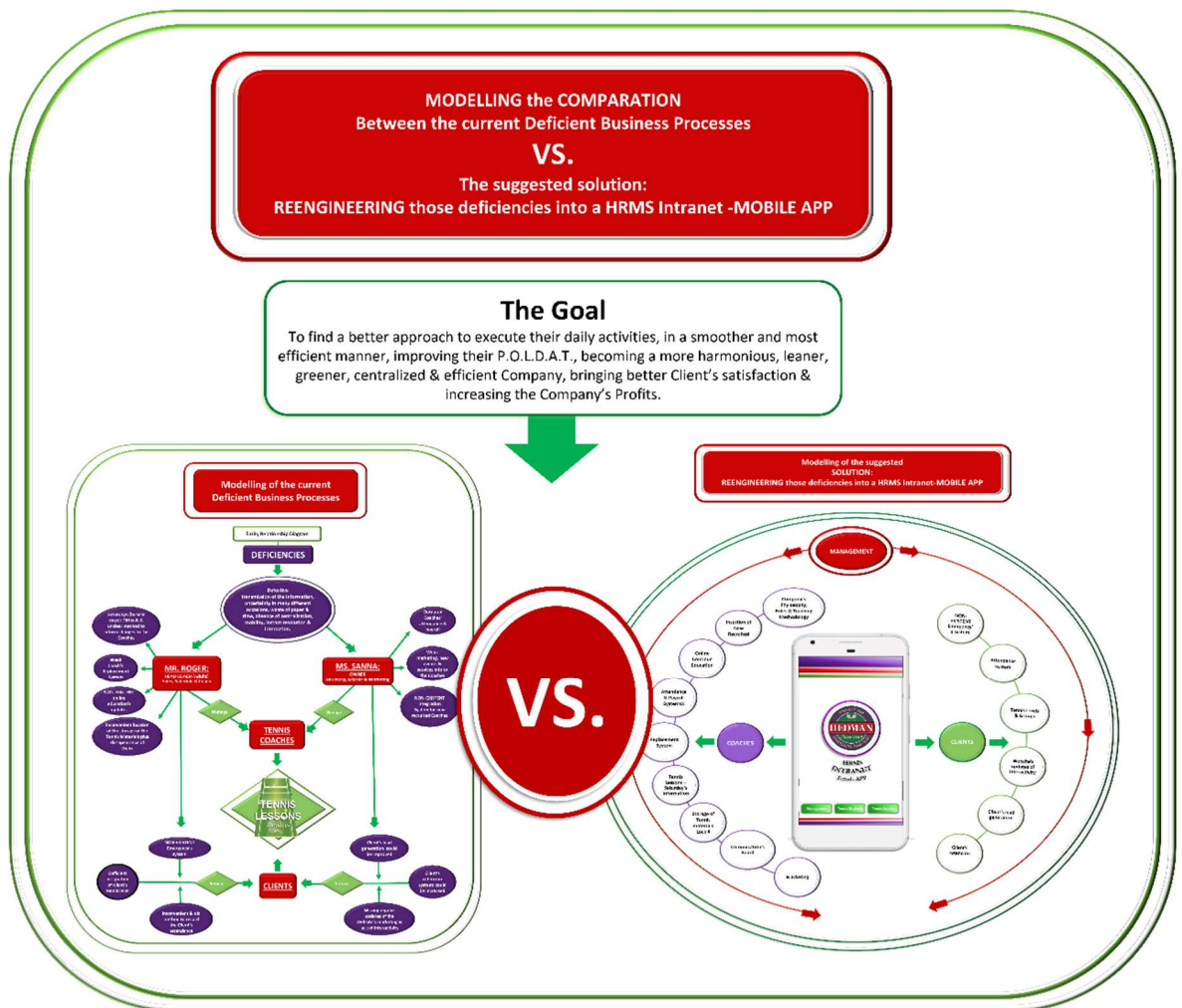


Figure 36 - Define needs - BPR (Analysis framework) - R - Redesign - Current deficient business processes VS. the suggested solution

7) E - Ensure:

The successful implementation of redesigned processes through proper monitoring and evaluation.

3) Test business solution

This step would be executed depending on the decision of the company regarding this case study research's suggestions.

#### 4 Feedback from the client-company

Ms. Sanna Hedman, manager and one of the owners of Hedman Tenniskoulu Oy replied:

- ❖ “Our company will utilise this thesis project work as an adviser.
- ❖ We already have adopted Natalia's suggestion from her thesis and based on it, we have acquired a system called MyTennis, which contains the information about clients, courts, groups, and coaches on the mobile, reducing the utilization of papers and having everything on our phones.
- ❖ The project delivered good results, and the prove of it is that we, as a company, have already adopted the thesis's advice and developed a new system.
- ❖ The cooperation with the student was successful because we were invited, interviewed, asked, and informed about what the thesis was going to be about and in what direction the research for solutions was going to be oriented.”

#### 5 Conclusions

Finalizing, I will resume in a clear manner the conclusions obtained from the analysis work that I executed on this thesis of the prestigious & famous Hedman tennis school company.

##### 5.1 Research methods (Collection of primary data)

I utilize as a research model design a qualitative research method by utilizing case study research. Based on a personal interview with one of the owners, Ms. Sanna Hedman, plus a delivered survey to their tennis coaches and my personal experience as a tennis coach working for this company during several years, I elaborated eight company's goals.

I analysed the data with the qualitative data analysis, by utilizing its survey and framework analysis to arrive to a solution.

##### 5.2 Theoretical analysis frameworks (Benchmarks)

My final advice to the company, was originated from the result of my benchmarking with the business analysis framework (first). I followed the steps from its solution life cycle and I

- 1) Analysed the business needs: by utilizing other four analysis frameworks as well: The Enterprise (2<sup>nd</sup>), the Business architecture (3<sup>rd</sup>), the P.O.L.D.A.T. (4<sup>th</sup>) and the Green processes management (5<sup>th</sup>).

- 2) Define the business solutions: by utilizing the last (sixth) analysis framework, Business process reengineering (BPR) - I.N.S.P.I.R.E.
- 3) Test the business solutions: This step would be executed depending on the decision of the company regarding this case study research's suggestions.

By executing the first step of the solution life cycle, I analyzed their business structure and processes (P.O.L.D.A.T Domains) and found: sixteen deficiencies into their different business processes.

Based on them, I elaborated eight goals for their company. Trying to achieve the goals, I designed sixteen objectives that should be accomplished to find a better approach to execute their daily activities, in a smoother and most efficient manner, improving their P.O.L.D.A.T., becoming a more harmonious, leaner, greener, centralized & efficient company, bringing better client satisfaction & increasing the company's profits.

### 5.3 Development (Management approaches/methods)

I developed this thesis based on the Waterfall - SDLC approach and the Lean six sigma method. I utilized the concatenation aspects of the Waterfall and the focus on the improvement of existing processes: DMAIC steps, and creation of new ones: D.M.A.D.V. from the Lean six sigma.

### 5.4 Deliverables of this Thesis (Case study research)

Unfortunately, due to the over extension of this project, this thesis delivered only two objectives as a final product inside of the scope, being the following:

- 1) Research for existing HR I.T. solutions at the marketplace.
- 2) To create a custom-made prototype/wireframe of a mobile app and/or website, which would represent the technological solution this company needs.

### 5.5 Solution

My final advice to the company, was to incorporate a new software (specifically designed for the type of needs that they have) like the Intranet - H.R.M.S. Human Resource Management System, that would help them to control most of their HR processes, access the required information needed to carry on with their daily functional activities and interact with their employees on an instant and efficient manner.

That new software could be built into a mobile application, or a website and it would:

- ❖ Simplify & make more efficient the daily activities of HR/Management & the employees (Tennis coaches).

- ❖ Become leaner, greener, centralize & efficient.
- ❖ Facilitate the insertion, adaptation & integration of new employees.
- ❖ Achieve a smoother communication interaction between all the stakeholders.

To help the members of the company visualize the author's theory, findings, and conclusive advice, a detailed prototype of a Hybrid Intranet H.R.M.S. Mobile App, using Marvel.com was created <https://marvelapp.com/prototype/676ha3f>

And a prototype as well, using WordPress.com, of a H.R.M.S.-Intranet website: <https://tennishedman.wordpress.com/>

#### 5.6 Feedback from the client-company

Ms. Sanna Hedman, manager and one of the owners of Hedman Tenniskoulu Oy replied:

“The project delivered good results, and the prove of it is that we, as a company, have already adopted Natalia's suggestion from her thesis, and based on it, we have acquired a system called MyTennis, which contains the information about clients, courts, groups, and coaches on the mobile, reducing the utilization of papers and having everything on our phones.”

Offering my assistance and wishing the best to my loved ones at Hedman Tennis School!

Natalia C. Mariscal

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