



DIGI-GRENT Project

Good practice – digitalization of a private hospital

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1 Introduction

1.1 Good practice definition

Good practice is a method or technique that has been generally accepted as superior to any alternatives. It has been proven to work well and produce good results¹.

1.2 Good practice criteria

The following set of criteria will help you to determine whether a practice is a 'good practice':

- ***Effective and successful***
A good practice has proven its strategic relevance as the most effective way to achieve a specific objective; it has been successfully adopted and has had a positive impact on individuals and/or communities.
- ***Digitally-driven or digitally-enabled***
A good practice that uses technology (digital means) in order to ensure its operations, innovation or collaboration.
- ***Environmentally, economically and socially sustainable***
A good practice meets current needs, in particular the essential ones of the world's poorest, without compromising the ability to address future needs.
- ***Technically feasible***
Technical feasibility is the basis of good practice. It must be easy to learn and implement.
- ***Inherently participatory***
Participatory approaches are essential, as they support a joint sense of ownership of decisions and actions.
- ***Replicable and adaptable***
A good practice should have the potential for replication and should, therefore, be adaptable to similar objectives in varying situations.
- ***Reducing disaster/crisis risks, if applicable***
A good practice contributes to disaster/crisis risk reduction for resilience.



2 Good practice description

2.1 Objective

The primary objective of this document is to describe a particular company model or approach that fulfills at least one of the goals stated in the introduction of this chapter. In the ideal scenario, the example should encapsulate correct behaviours in all three areas.

First of all, it should be ecologically-friendly or deeply aware of its impact on the environment. Secondly, it should be familiar with the modern world's technology, with all cyber threats and responsibility for securing and integrating data in the digital environment. Lastly, the outlined good practice ought to understand and manage the quintuple helix model when it comes to the digitalization and security (at least in some ways).

The good practice was chosen to be the digitalization of a private hospital located in Łódź, Poland. This process concerns designing, implementing and maintaining a large information system. This system allows the hospital to serve both patients and doctors, as well as cooperate with pharmacies and government healthcare in a modern way, taking advantage of the Internet and digital possibilities of newest IT solutions. This whole digitalization project of the hospital is called "mMedica".

The chosen good practice concerns the medium-size and large companies, institutions and entrepreneurship. The reason for that is the high cost of such a solution. Complex IT systems are highly expensive, but provide its clients with a powerful tool for processing (and securing) large amounts of data. In the long term, this approach enhances the performance of the business and allows to restrain from using paper, limit transportation needs and hire fewer employees. A lot of unnecessary work is done by computers, not humans. Small businesses in most cases do not need such a solution to justify the costs.

2.2 Introduction

Numerous companies change their business approach and invest in IT systems as soon as they acquire the necessary capital for that. To give practical examples of some of the benefits of this good practice, a listing below consists of few major points.

- Digital management of patients data
- System for patient queue distribution
- Online registration and management of appointments



- Management and creation of payments and invoices
- Online issuing and printing of medical prescriptions

Advanced IT systems are useful not only for healthcare organizations and institutions. In today's world, any kind of company processes information. From working with payments, sending notifications in different systems (email, SMS, etc.) to global communication and processing documents. Such a good practice allows not only to become more advanced on the market, but also makes the business more eco-friendly because it often vastly reduces transportation, printing and paperwork, and hiring additional staff. Furthermore, companies and organisations that have their representation online are significantly easier to communicate and cooperate with. These businesses can work with physical persons, other business entities, government and academic organisations, which makes them a part of the quintuple helix system.

In conclusion, IT systems are costly solutions that provide multiple benefits. The good practice of “mMedica” has the following objectives: make people's lives more convenient, become more technologically advanced, eco-friendly, and be an aware and impactful part of the quintuple helix system.

2.3 Actors and Stakeholders

The direct beneficiaries and users of the good practice described in the previous sections are the client (private hospital) and its patients and staff. The indirect beneficiaries are pharmacies and institutions cooperating with the hospital. What is worth outlining, the whole society benefits from such practices since it makes large businesses easier to work with and more environmentally-friendly.

2.4 Methodological approach

The system described as a good practice is available in two versions: demo and full access. Apart from that, there exist several additional modules that can be purchased by the client. The installation of “mMedica” is thoroughly described in the program manual². It consists of the following steps.

1. Installation prerequisites – step involves checking the operational system requirements, the database connection and types of installation.
2. Installation scenarios – description of the demo version, software installation process and accessibility on Linux/UNIX machines.
3. Activation and configuration of the system



4. Installer service mode – step describing the installation of additional applications, “mMedica” updating, “mMedica” recovery, management of databases, and “mMedica” removal.

2.5 Validation

When it comes to the validation of the practice outcome, opinions of patients, doctors, and administration staff were taken into account. The good practice was implemented by multiple medical facilities and hospitals in Poland.

Starting with the Medical Center in Chorzow, the center owners were fully satisfied with the results. Their goal was to digitalize their facility and provide services more conveniently. “mMedica” resolved problems with scheduling and attending appointments by patients³. On the other hand, it raised the quality of services of the facility. More details concerning the practice implementation and its validation are accessible in the reference letter stated by the Medical Center⁴.

Secondly, the information system was fully implemented in City Health Center in Sucha Beskidzka. Similarly to the previous case, the client successfully implemented the system and the feedback was positive. Confirmation of the acceptance of “mMedica” is included in the reference letter by City Health Center⁵.

Summing up, the good practice was accepted by different facilities. It eliminated problems for both patients and facilities and allowed to provide medical services in a digitalized way.

2.6 Results/outputs

The main output of the good practice is an advanced information system for healthcare institutions and hospitals. The list of end products and services⁶ offered by the system is broad, thus only the most important results and those that contribute to the eco-friendly approach and the quintuple helix system will be provided.

1. Digitalization of a company/business
2. Enhancement of provided services
3. A convenient and comfortable solution for all users
4. Reduction in the harmful impact on the environment (transportation, paper usage, etc.)
5. A suitable solution for the quintuple helix system (information system makes it easy to cooperate with government, academic and business entities)



6. Security and integrity of data

The good practice is popular among nowadays' enterprises that possess financial resources to invest in technology and development. However, small businesses and start-ups can feasibly implement smaller versions of such a software system, adequate to their needs. In all cases, the list of advantages and improvements is large enough to convince entrepreneurs.

When it comes to the possible obstacles, the process of implementing such a software system is demanding and long. It requires not only financial resources but also the willingness to learn and understand the complex system. All beneficiaries and clients of the practice need to bear in mind that specialistic trainings are essential to know how to use the system efficiently and responsibly.

2.7 Impact

The impact of the good practice is general improvement of provided services, more convenient data storage and management, better communication tool for users and facility staff, and several more positive changes. However, the practice brings also demanding challenges. First of all, the process of transmitting and deploying data to the digital system is long and requires technical knowledge. Secondly, the company needs to invest in special trainings and encourage users to learn about the software and use it. Thirdly, it is crucial to focus on the security of the data of all possible clients. Fourthly, the period of the system implementation involves storing the necessary information in both systems – old one and the digital one (“mMedica”). It requires a lot of effort. Lastly, the new system is vastly expensive and, in some cases, involves the utilization of the funds from government institutions.

2.8 Success factors

The good practice of the “mMedica” information system is fought of as a successful project because of the uncountable list of benefits it brings for the clients. Responsible digitalisation of companies is always a big advancement in terms of the quality of provided services and quick access to information. Two things distinguish the practice from other similar ideas. Firstly, the modularisation of the IT system – different clients can purchase different additional modules of “mMedica” that suit their needs. Secondly, the system offers full communication and management of payments connected with the Polish National Health Fund (main government healthcare institution). It allows for a close relationship for “mMedica” clients (hospitals, health centres, etc.) and the government entities. Cooperation can be



mutual and the processing of documents and any kind of information is significantly simplified. What is more, the good practice also makes it easy to work with other healthcare organizations and entities. All in all, digitalized enterprises and businesses that take advantage of such IT systems are rooted in the quintuple helix system – a system of cooperating units of different natures (government, commercial or academic).

The success of the practice cannot be achieved until its clients, business and government partners are willing to cooperate and make full use of the system. Human commitment, especially from the elderly, less technologically-aware people, is crucial. Another important factor is the availability of resources. Each entity that implements the good practice must be able to spend funds for both the system implementation and maintenance. Any stops in the platform maintenance result in a worthless product for the end-users.

2.9 Constraints

The described good practice is a profitable idea for all types of businesses, especially for mid-size and large healthcare facilities. The improvement in the field of communication and data management is doubtlessly a great benefit for entrepreneurs and their clients. However, there are some obstacles they face while developing the advanced information system and some watch-outs that should be bear in mind to make the process possibly most efficient. This section discusses the main tips and traps related to the good practice of applying “mMedica” program.

The first challenge while introducing the software is the fact, that its potential customers might be sceptical towards any innovations and techniques they are not familiar with. Adapting, maintaining and managing this system requires background knowledge about its functioning and information systems in general, which may seem confusing for a new user. Secondly, the initial investment needed for establishing a program might be deterring. In order to settle a well functioning system, a huge financial and time contribution is required.

The possible improvement is mostly focused on conducting training sessions for employees, as well as providing simple and short manuals for patients. Thanks to them, people would feel more confident about the solution and profits that it generates.



2.10 Lessons learned

Major changes to the system of any enterprise or business give food for thought. When it comes to “mMedica”, the key lessons learned from the practice are presented in the listing below.

1. Communication between government and business entities can be enhanced thanks to the digitalization.
2. Advanced information systems vastly improve the quality of services.
3. Digitalization with an emphasis on security makes it possible to store and manage a large amount of data responsibly.
4. Digitalization reduces the harmful impact on the environment thanks to limiting the transportation needs, usage of paper, and the number of staff hired by the company.
5. Digitalization requires commitment, trainings and big investments.
6. Society, in general, appreciates technological changes.

2.11 Sustainability

Sustainability of the good practice is achieved thanks to the involvement in maintaining the practice throughout years. Both intellectual effort and financial resources are crucial to make the practice preserve in the long term future. Technology is constantly developing, thus the introduced solution can be extended and improved as long as it is needed by the clients, the society and it is economically feasible to continue the research and development of the system. In the past, global digitalization is sustainable and enterprises do not wish to move back with their system and business models to the pre-digital era. Moreover, the more digitalized the companies become, the more eco-friendly they are, since processes performed via the Internet, with large information systems or smaller web applications, are always more effective and less resource consuming. The innovative and modern approach to entrepreneurship is a core factor to reduce the harmful effect on the environment.

2.12 Demonstration

The first picture represents the home page of the program. All options, additional features and information are clearly outlined and easily accessible through intuitive symbols. Figure 2.12.2. shows the calendar for the healthcare institution. All appointments, trainings and important dates are gathered together. A sample doctor panel is presented in Figure 2.12.3. It consists of step by step medical

interview, which enables quick and precise data examination and comparability with patient's previous diseases.



Figure 2.12.1. 'mMedica' Home page⁷

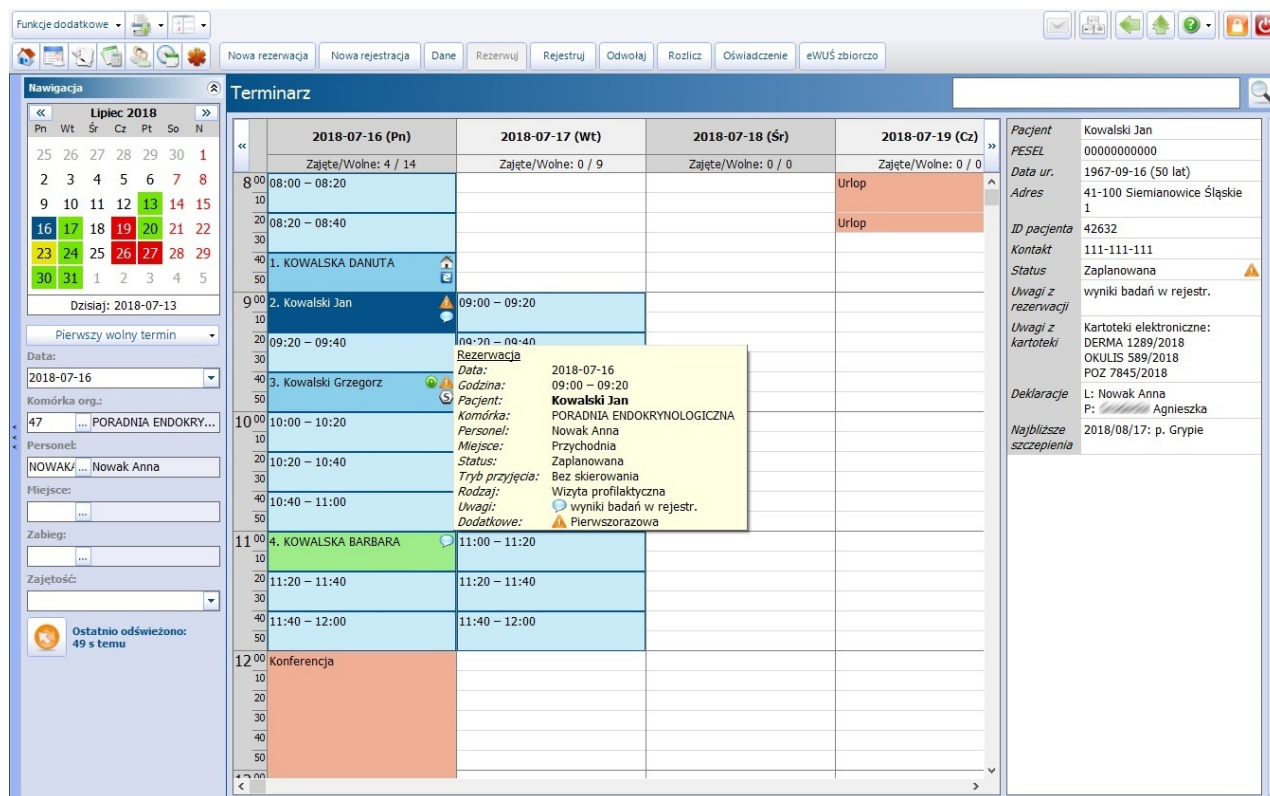


Figure 2.12.3. 'mMedica' calendar⁸

Figure 2.12.3. 'mMedica' doctor panel⁹

Presented outputs create a general overview of 'mMedica' tool functions. The whole system is much more complex and can be adapted to the needs of the company and users.

2.13 Related website(s) / resources

1. Nash, J. and Ehrenfeld, J., (1997), "Codes of environmental management practice: assessing their potential as a tool for change." Annual Review of Energy and the Environment 22, pp. 487-535; Bretschneider, S., Marc-Aurele, F.J., Jr., and Wu, J. (2005), "Best Practices" Research: A methodological guide for the perplexed, Journal of Public Administration Research and Theory , (15) 2, pp. 307-323.
2. <https://mmedica.assecop.pl/assets/Dokumentacja/mM-Instalacja-programu-mMedica.pdf>
3. <https://mmedica.assecop.pl/aktualnosci/show/sukcesy-wdrozen-e-rejestracji-dla-m-medica-opinie-uzytownikow>
4. <https://mmedica.assecop.pl/assets/Dokumentacja/eRejestracja-wdrozenie-referencje-NZOZ-CM-Sw-Pawla-Chorzow.pdf>

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5. <https://mmedica.asseco.pl/assets/Dokumentacja/eRejestracja-wdrozenie-referencje-MPZ-Sucha-Beskidzka.pdf>
6. <https://mmedica.asseco.pl/oferta/charakterystyka-programu-mmedica/>
7. – 9. <https://mmedica.asseco.pl/oferta/galeria/>

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