DIGI-GRENT Project

Good practice - *Airly Ltd*

Date:	03.10.2019
Place:	Thessaloniki

Authors

No.	Name and Surname
1.	**Paweł Głodek**
2.	**Renata Lisowska**
3.	**Magdalena Ratalewska**
4.	**Jarosław Ropęga**
5.	**Magdalena Wiśniewska**

This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

2 Good practice description

Area: **Eco-friendly digital business models for startups**

Name of organisation: **Airly Ltd.**
Address: **Mogilska 43 St., 31-545 Kraków, Poland**

2.1 Objective

The aim of good practice is to present the conditions influencing the success of launching an eco-friendly digital startup model and to indicate the directions of development of such an undertaking. The designed start up should actively engage digital resources in order to support the society.

Good practices in this area should be aimed at conducting social dialogue, which should involve organizations such as local authorities in the process of planning and implementing projects in a socially responsible manner, including making investments that serve the society in areas such as health, education and culture, access to technology.

Good practice is recommended for the business model based on the principles of corporate social responsibility and sustainable development, which has been forced by such problems as climate change, progressive degradation of the natural environment, depleting raw materials, demographic changes and growing poverty. This model also requires cooperation, commitment on the part of public sector representatives, opening of the company to dialogue with interest groups, striving to minimize the negative impact of the company on the environment.

2.2 Introduction

The example of Airly can be a model for the implementation of good practices by other entities interested in using the business model adopted by it as part of the strategy (including mission and vision).

This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

In the case of Airly, the mission and vision have been clearly indicated as the basis for implementing its strategy. Good practice indicates the need for a clear articulation of the mission and vision as components of building a future business model.

Mission:
Increasing awareness about the meaning of air quality, and consequently, bringing an effective contribution to solve the pollution problems and improve the quality of life for people all around the globe

Vision:
Creating the most innovative and effective tools for measuring the air quality and providing the most reliable, real -time data about pollution to the largest possible number of people.

Good practice should pay attention to the need to clearly articulate the challenges. In the case of Airly, they are committed to environmental protection, sustainable development, and innovation that distinguishes start-ups. The use of information technology supports start-up processes. For the analyzed company, the challenge is to provide real-time, reliable and precise information on air quality in the Platform as a service model. Such information can highlight areas for improvement to guarantee a safe environment for city residents, which cannot be achieved by relying only on a few expensive official air quality stations

Good practices should identify the challenges of a real product with respect to both the product core and the extended product. For the product core, Airly has identified the quality of the product technology, which is a single sensor, the software used to support connectivity between the sensors and the system, and the mapping technology and visualization of results.
On the other hand, for the extended product, a service was created in which an autonomous meteorologist prepares advanced air pollution forecasts for Airly.

The forecast of air pollution is a very difficult conceptual and computational task, requiring considerable research and simulation expenditure. Many research centers and commercial companies are working on effective procedures to try to indicate the state of air pollution in the time to come. Unfortunately, most of them determine only the average daily level of pollution the next day.

This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

On map.airly.eu you can see the pollution forecast specified in the CAQI index. What is more, the air quality prediction includes estimations of the state of pollution for the next day, hour after hour. Airly's forecast accuracy remains at + 80%.
In order to implement this task, innovative algorithm solutions in the field of Machine Learning were used. The currently used predictive algorithm is based on methodologies of artificial neural networks, whose task is to predict the state of air pollution based on data from the past and estimation of forecasts of selected meteorological parameters (such as wind strength, temperature or air humidity).

As explained by Piotr A. Kowalski PhD – an expert in machine learning at Airly: "artificial intelligence translates directly into the possibility of applying ever new structures of neural networks in areas such as ecology, which by its nature is rather far from computer science. The synergy of such different fields is able to meet the challenges that are very close and necessary to people both on a daily basis and in a much longer time horizon".

The goal of good practice is to create and inspire future startups. The demonstrated example of a company combines classic mechanisms based on planning both in relation to the environment and the resources of the organization, organizing both internal and external resources, creating a social subsystem in the form of various forms of cooperation, coordinating existing resources in order to effectively assess their own capabilities and available resources and on the basis of taking challenges. Good practices should inspire to rebuild the business model depending on the stages of organization's development and predict this type of design already at the start-up phase.
The main areas of activity necessary to build good practice on the example of Airly.
Airly was established by engineers with a shared vision and passion for new technologies. Its founding team of physicists and mechatronic technicians was then joined by software developers and marketing specialists. The data collected with Airly sensors allows us to provide advanced air quality analytics and AI-based predictive models. Airly provides products that collect real-time information, reliable and precise information about air quality in the Platform as a service model.. Such information can highlight areas in need of improvement to guarantee a safe environment for a city's inhabitants, which cannot be achieved by relying on just a few, expensive official air quality stations.

2.3 Actors and Stakeholders

Cities and municipalities, companies and media that care about the quality of air.

This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Enterprises, that want to create innovative and effective tools for measuring the air quality and providing the most reliable, real-time data about pollution to the largest possible number of people.

Environmental and ecological institutions and organizations, Local governments

The air is an invisible part of our everyday life. We need it to live. However, the air we breathe slowly but surely affects our health, and the health of our loved ones. When we live consciously, we can have a real, positive impact on our environment and we can create a more productive future. Where to start? By checking the conditions around you. In an era of smart cities and tech inventions, we have the opportunity the improve our quality of life. Airly sensor networks gather insights about our cities. It's about far more than just data, though: networks are meant to open eyes and raise awareness, thus helping to explore and improve the environment in a new way.

After the campaign targeted at Krakow was over, other Polish cities showed significant interest in also having such a network of sensors. Airly decided to run a national–scale project called #PolskaOddycha (Poland Breathes). By now, some of these cities have already invested in and bought network of sensors. Airly is also open to collaboration with cities in other countries

Based on sensor data, monthly reports are created for cities and municipalities. They allow you to know the most polluted locations in a given location, thanks to which an immediate reaction of local authorities is possible. The great advantage of the system is the smog forecast - it is precise due to the dense sensor network. It is prepared by an autonomous synopticist using artificial intelligence and advanced algorithms. The forecast covers the next 24 hours, hour by hour. Checkability is over 80 percent.

2.4 Methodological approach

Using the Airly business model in the area of customer relations, stakeholders, identifying product value for customers.
The good practice implementation procedure should start with the introduction of management, e.g. in the form of a presentation, a case study of Airly Ltd. The next step is to analyse the market, focusing on the problems related to ensuring sustainable development as a result of e.g. climate change, progressive degradation of the natural environment, depletion of raw materials, demographic changes and growing poverty. The next step is to build a start-up concept based on a

This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

business idea and establish cooperation with the public sector. The last stage is the launch of Eco-friendly digital business start-up.

2.5 Validation

Validation: *Confirmation by beneficiaries that the practice properly addressed view.*
How the practice can be validated with the stakeholders/final users?
Brief description of the practice validation process.

2.6 Results/outputs

Start-up could use good practice to improve the business start-up process and the standards of a company focused on corporate social responsibility and sustainable development. Good practice will enrich the knowledge of the management staff and will be a tool to improve the quality of human capital based on the experience of other companies.

The key benefit of implementing good practice is the ability to easily transfer the business model in the area of relations with stakeholders, use the experience of Airly's cooperation with local governments in various countries (currently operating in 14 countries).

2.7 Impact is the long-term development improvements to which the good practie contributes.

What is expected impact of the good practice for the company?
Can the impact be measured through monitoring and evaluation? What indicators can be developed?

2.8 Success factors

The idea is original and innovative, has a small group of followers. The company is distinguished by a quality policy in the form of selling value to the customer: timeliness of data, measurement quality, access to technology, widely available measurement results.
Social: awareness of people and authorities about the negative effects of air pollution
Law: regulations regarding pollution monitoring, alarm standards etc.

2.9 Constraints

This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

How to Increase awareness about the meaning of air quality, and consequently, bringing an effective contribution to solve the pollution problems and improve the quality of life for people.

2.10 Lessons learned

Convince the authorities that it is worth investing in air monitoring. At first, it was difficult to convince the city authorities of the product. However, it turned out that the advantage is network, sensor placement in many urban areas, which allows smog monitoring in different parts of the city.

2.11 Sustainability

What are the elements needed for the practice to be institutionally, technologically, socially, economically and environmentally resilient and/or sustainable?
What are the total costs incurred for the implementation of the practice? Cost/efficiency indications: institutional, social, economic and/or environmental benefits compared with total costs?

2.12 Demonstration

Preparation of a manual describing how to introduce good practice and the benefits and costs associated with its application Related website(s) / resources

Materials that can be indicated as reference to the good practice material.
https://airly.eu/en/collaboration/gov/

https://airly.eu/map/en/

https://www.youtube.com/channel/UCWbFDJLktE_DgRWOb-yJ0pw

This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.