European Network for Rural Development

Developing a mobile live stream application for emergency services

EAFRD-funded projects

DENMARK

Fostering local development in rural areas

Location
Thisted

Programming period
2014 – 2020

Priority
P6 – Social Inclusion and Economic Development

Measure
M19 – LEADER/CLLD

Funding (EUR)
Total budget 32 658
EAFRD 13 063
National/Regional 3 266
Private 16 329

Project duration
2016 – 2017

Project promoter
INCENDIUM ApS

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Developing innovative IT solutions that allow potential clients of a small company to assess the efficiency of the promoted software for emergency services.

Summary

The beneficiary produces software targeted at Danish emergency services, which allows for the streaming of emergencies e.g. to internal operations centers. However, the required hardware to test the software was expensive for clients, and existing software solutions were targeted at regular consumers and had no particular focus on ensuring that streaming delay is as low as possible.

The beneficiary received support to develop an app that was able to send and receive live video streaming on a secure and user-friendly mobile platform via mobile phone or tablet with minimal delay so that potential customers could test the technology at minimum cost.

Results

The app was developed very much according to plan and serves the purpose of demonstrating the benefits of being able to send and receive live images during rescue operations

At the end of the project one new job position was created and two new customers has purchased the application.

It is expected that two years after the end of the project 3 more jobs will be created, the yearly revenue will increase from EUR 53 700 to EUR 1 006 800 and the gross profit will increase as well from EUR 8000 to EUR 161 000.

Lessons & Recommendations

- The beneficiary managed to implement the project within a short timeframe within budget and produced a fully satisfactory output. The is due to the fact that the beneficiary was very clear on what they wanted from the product, and which phases were necessary to go through during the project period to ensure that they would get there.
- Often developers start expanding a project and add functionalities in order to accommodate a very small minority of use cases at the expense of simplicity and user friendliness. The beneficiary therefore highlights the need to keep it simple with very few options for the emergency personnel on sight who work in high stress situations and need to be able to act swiftly and without delays.

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Context

Prior to implementation of the project, the beneficiary already produced software targeted at Danish emergency services, including the Danish Emergency Management Agency and the Danish National Police. The software allows for the streaming of emergencies e.g. to internal operations centers and had the potential to assist the emergency services to better coordinate their rescue operations. However, the required hardware to test the software was expensive for clients and the company therefore had difficulties penetrating the market because potential clients did not wish to invest in expensive equipment to obtain a substantial proof of concept. The company therefore needed a method for demonstrating the functionality and potential of the software without the need for considerable hardware investments. One solution to this was the use of own mobile devices.

Other apps already existed on the market, which were able to either send or receive live streaming. However, these apps are targeted at regular consumers. Therefore, the apps have no particular focus on ensuring that the delay is as low as possible. When a user uses a mobile or tablet to watch live video, based on android and iOS, these devices delay playback through a buffer to ensure a good and stable streaming experience without breaks. Such a delay may vary from 2 to 20 seconds depending on the network coverage available on the user's phone or tablet. The delay in the signal may have decisive negative impact for live streaming users within the emergency response segment. If the streaming software was to be used for the live streaming of a fire, this delay might not be crucial, but if the live streaming was used in the process of directing a person's action, such a delay clearly would not be tolerable.

Objectives

The beneficiary wished to develop an app that was able to send and receive live video streaming on a secure and user-friendly mobile platform via mobile phone or tablet with minimal delay. The hope was that the low start-up and demonstration costs and the easy access would make it more attractive for potential customers within the emergency service segment to test the technology. As a result, emergency services would be made aware that innovative solutions of this type allow for the actions they take during an accident or emergency to be more precisely adapted to the specific incident.

Activities

The project was implemented in 7 phases:

1. *Overall Preliminary Analysis* - The overall preliminary analysis provided the necessary information, which the project needed for the organization and implementation of the subsequent 6 phases. The analysis identified which key features were required by the system, described the user scenarios and drew up an overall vision of the product in an operational document.
2. *Design based on components / requirements* - In this phase a workshop with selected stakeholders was conducted which allowed for the design of a prototype of the system. Furthermore, during this phase the beneficiary identified the project's costs, plans and risks.
3. *Analysis & Design* - During the analysis phase, the beneficiary studied and reviewed the list of project risks in detail as well as developed a detailed project plan of expected activities. A stakeholder analysis, a risk analysis and a SWOT analysis were prepared along with a Gantt schedule of the time estimation and resource allocation. In addition, the prototype was presented to stakeholders, and the overall design of the product was determined on the basis of the workshop and stakeholder feedback.
4. *Development* - The construction phase was conducted in part by a subcontractor (Picatek), which is another locally based company and partly by other subcontractors. During the construction phase, system features were developed and tested. In addition to the app, manuals and documentation were also written during the phase.
5. *Testing* - During the test phase, integration tests were performed to ensure full functionality and interaction between the new app and Incendium's existing web-based platform and streaming service. Also, overall system tests of the app were conducted followed by complete end user tests and acceptance tests.
6. *Implementation* - During the implementation phase the solution was integrated into Incendium's streaming environment and it was ensured to run in the desired operating mode.
7. *Follow-up and Marketing* - In the final phase, the product was marketed to existing and potential customers through presentations, customer visits, articles in selected media and via fairs at home and abroad.

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Main Results

The app was developed very much according to plan and serves the purpose of demonstrating the benefits of being able to send and receive live images during rescue operations. As a result of the project, the beneficiary has established innovative, knowledge-based business collaborations with other companies, including hardware companies and subcontractors. At the end of the project period, the micro-company had achieved the following financial direct effects:

A new update of the app was recently released (November 2017) which freezes the mobile and tablet in streaming mode after 15 seconds of streaming. It thus maintains the filming and streaming until the user swipes the screen and actively ends the session. This update has been developed as a response to customer requirements, as it allows rescue personnel to attach the mobile or tablet to the suit without the risk of accidentally ending the stream while working.

For users of the app, the project has resulted in more effective working procedures during rescue operations. For instance, the operations centres are able to assess whether reinforcements need to be sent to the incident, and ascertain what type of reinforcements will be required. For example, the emergency services may need to assess whether buildings are at risk of collapse or people need to be evacuated. The solution has streamlined the work of the emergency services and therefore contributes to saving lives. The internal operations management can communicate with the rapid intervention team more quickly and more efficiently. In addition, the emergency services can communicate externally more quickly with the people affected and provide better public service information by quickly alerting via social media in the event of fire.

At the end of the project one job position was created and two new customers has purchased the application. It is expected that two years after the end of the project 3 more jobs will be created, the yearly revenue will increase from EUR 53 700 to EUR 1 006 800 and the gross profit will increase as well from EUR 8000 to EUR 161 000.

Key lessons

The beneficiary and partners highlight two overall lessons that may be extracted from this project, one related to the product and one related to its use:

Firstly, the beneficiary managed to implement this project within a short timeframe within budget and still produce a fully satisfactory output. The key to this success is that the beneficiary was very clear on what they wanted from the product, and which phases were necessary to go through during the project period to ensure that they would get there. Seeing as this is a development project with quite a high degree of innovation through the development of solutions, functions and options along the way, the beneficiary states that one may easily be ensnared by the many good ideas that turn up along the way. An often seen consequence is that the developers start expanding on the project and adding functionalities in order to accommodate a very small minority of use cases at the expense of simplicity and user friendliness. The beneficiary therefore highlights the need to keep it simple with very few options for the emergency personnel on sight who work in high stress situations and need to be able to act swiftly and without delays.

Another interesting lesson learnt, is the need for an internal discussion on morals and ethics by the emergency services who intend to use the product. Although the live videos are only for internal use, it is not uncommon that rescue personal, in extremely pressured situations, may accidentally say things that may be misunderstood and which are risky to use out of context. Such statements are captured and included on a live stream, and it is beneficial to have policies and protocols in place in such cases to maintain a good working environment.

Additional sources of information

n/a

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