|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  | | --- | --- | --- | --- | |  | | **MINISTRY OF EDUCATION AND TRAINING** | | | **FPT UNIVERSITY** | | |
| Capstone Project Document |
| Online Medical Consultant System |
| |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  | | --- | --- | | **Group 02** | | | **Group member** | Trần Nguyên Tiến Sứ - Team Leader - SE60781  Trần Cao Danh - Team Member - SE60705  Trương Hải Đăng - Team Member - SE60841  Bùi Nguyên Tín - Team Member - 60165 | | **Supervisor** | Mr. Nguyễn Huy Hùng | | **Ext. Supervisor** | N/A | | **Capstone Project code** | OMCS | | |
| * Ho Chi Minh City, 11 May / 2014 – |

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## Project Information

* Project name: **Online Medical Consultant System**
* Project Code: **OMCS**
* Product Type: **Web Application**
* Start Date: **May 11th, 2014**
* End Date: **August, 20th, 2014**

## Introduction

With the emergence of the Internet, many systems have been built to reduce the gap between patients and doctors. They provide the convenient way by let patient communicate face-to-face with health care provider via social media. That is successful story from many developed countries that we try to apply for Vietnam using different approaches.

Nowadays, Vietnam hospitals usually are overwhelmed[1] with patients. A lot of plans have been proposed to handle that situation[2]. Besides that, taking a medical treatment at hospitals not always a good choice due to the traveling cost, wasting time and unsafeness[3].

Based on observation, we see that there are many cases that patients don’t need to go to the hospital quite often because those can easily conduct via internet. So we want to improve the processes of medical treatment.

## Overview of similar existing solutions

1. HealthTAP <https://www.healthtap.com/>

*“55,000 doctors. No waiting room.”*

Build an interactive health network, people can access large resources health information. Connect directly with doctors. Doctor can build a great reputation by provide high quality consulting.

1. MDLIVE <https://www.mdlive.com/consumer/choose.html>

“*Get 24/7 access to doctors video or phone!*”

Patient registers as a member of the system and make appointment with consultant. After waiting for an email to confirm, he can have a video meeting with doctor.

1. Alobacsi <http://alobacsi.vn/kham-benh-online.htm>

*“Vì sức khỏe người Việt”*

Search in knowledge base (nearly 100000 questions)

Make question by submit the form

1. Tuvansuckhoe24h <http://www.tuvansuckhoe24h.com.vn/>

*“Chia sẽ cùng chuyên gia”*

Support chatting using yahoo

Ask question for consultants

## Limitations of the existing system

Medical treatment conduct via video meeting really hard to ensure the reliability and validity in comparison with traditional method. Those existing system only support for a limit range of cases (Ex. common diseases: flu, headache, acne,…). Based on a research in Netherlands[4] some of most popular topics were:

* + Side effects of medication (62.5%)
  + Symptoms (59.7%)

The quality of a meeting video strictly depends on the acceptable resolution of webcam. Poor video streaming can lead to wrong diagnosis.

In Vietnam, currently we don’t find any system support online meeting with doctor.

## Proposed Solution

Our system try to apply make life much better for Vietnamese by provide many features:

* + Patient can have their medical profile when the first time they go to the hospital.
  + With medical profile, doctor will have a reliable resource when conduct a video meeting to see the progress of healing periodically without meeting directly in the hospital.
  + Beside video meeting, our system provide real-time chat function and attach high resolution image to have more accurate view.

OMCS is useful for many specify cases like:

* + Control chronic condition
  + Skin infections, rashes diseases
  + Periodically check the progress of healing

## Disadvantage of OMCS

This system is not consider as a replacement for current hospital system, especially paraclinical tests when those need precisely equipment which really difficult to conduct via internet.

Electronic medical profile really hard to migrate with existing medical profile due to different formats in different hospitals. Doctor should create it manually.

|  |  |  |
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Reference:

[1] <http://nld.com.vn/suc-khoe/loay-hoay-chuyen-giam-tai-benh-vien-20120315104111496.htm>

[2] <http://www.vietnamplus.vn/no-luc-giam-qua-tai-cac-benh-vien-tai-tp-ho-chi-minh/245738.vnp>

[3] <http://www.nhandan.com.vn/suckhoe/tieu-diem/item/22586202-bat-an-nhu-vao%E2%80%A6-benh-vien.html>

[4] <http://www.jmir.org/2013/10/e220/>

# Report 2: Project Management Plan (PMP)

## 2.1. Problem Definition

### 2.1.1. Name of this Capstone Project

The official and formal project name is “**Online Medical Consultant System**”. Its abbreviation is **OMCS**.

### 2.1.2. Problem Abstract

With the emergence of the Internet, many systems have been built to reduce the gap between patients and doctors. They provide the convenient way by let patient communicate face-to-face with health care provider via social media. That is successful story from many developed countries that we try to apply for Vietnam using different approaches.

Nowadays, Vietnam hospitals usually are overwhelmed with patients. A lot of plans have been proposed to handle that situation[2]. Besides that, taking a medical treatment at hospitals not always a good choice due to the traveling cost, wasting time and unsafeness.

Based on observation, we see that there are many cases that patients don’t need to go to the hospital quite often because those can easily conduct via internet. So we want to improve the processes of medical treatment.

### 2.1.3. Project Overview

#### 2.1.3.1. The Current System

The current system I have known is a web application. This system will supply resources for interacting between patients and doctors. It helps doctors with their diagnosing, keeping tracking of disease process through webcam, medical record.

#### 2.1.3.2. The Proposed System

The main system will be a website.

The system will provide the following main features in front-end:

* Patient can have their medical profile when the first time they go to the hospital.
* With medical profile, doctor will have a reliable resource when conduct a video meeting to see the progress of healing periodically without meeting directly in the hospital.
* Beside video meeting, our system provide real-time chat function and attach high resolution image to have more accurate view.

The back-end will allow the administrator to manage the most important resources as well as medical profiles on the site.

OMCS is useful for many specify cases like:

* Control chronic condition
* Skin infections, rashes diseases
* Periodically check the progress of healing

#### 2.1.3.3. Boundaries of the System

The system under development of this Capstone Project will include:

* The complete website.
* All the process documents involved.

#### 2.1.3.4. Development Environment

Hardware requirements:

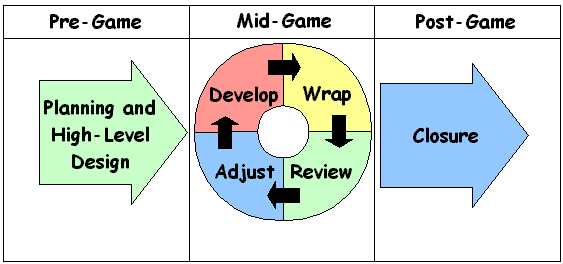
* A personal computer for developing with the minimum configuration: 1 GB of RAM, 20GB of hard disk, Core 2 Duo 2.0 Ghz.
* A server computer for testing with the minimum configuration: 2 GB of RAM, 20GB of hard disk, Core 2 Duo 2.0 Ghz.

Software requirements:

* Operating system: Windows 7/Windows Server 2008.
* Website Server: IIS 7
* Framework: .NET Framework 4.0
* IDE: Visual Studio 2012
* DBMS: SQL Server 2008 R2
* Source Control: Team Foundation Server 2010

## 2.2. Project organization

### 2.2.1. System Process Model



**Figure 1**: General SCRUM Process

### 2.2.2. Roles and Responsibilities

|  |  |  |
| --- | --- | --- |
| Full name | Role in Group | Responsibilities |
| Nguyễn Huy Hùng | Supervisor | * Tracking & managing progress. * Advising Idea & solutions. * Suggesting & supporting in technologies. |
| Trần Nguyên Tiến Sứ | Team Leader, Developer, Business Analyst, Tester, QA | * Tracking & managing progress. * Designing database. * Analyzing requirements. * Planning & scheduling. * Coding. * Testing. * Writing documents & reports |
| Trần Cao Danh | Developer, Business Analyst, Tester | * Analyzing requirements. * Designing database. * Coding. * Testing. * Writing documents. |
| Trương Hải Đăng | Developer, Business Analyst, Tester | * Analyzing requirements. * Designing database. * Coding. * Testing. * Writing documents. |
| Bùi Nguyễn Tín | Developer, Business Analyst, Tester | * Analyzing requirements. * Designing database. * Coding. * Testing. * Writing documents. |

### 2.2.3. Tools and Techniques

Tools:

* Microsoft Visual Studio 2012: Used to implement software modules.
* Microsoft SQL server 2008 R2 Express: Used as the database of the system.
* Microsoft Project: For the team leader to manage tasks of the members and the progress of the project.
* TortoiseSVN: Control source code of the whole project.
* Google Chrome, Firefox: Used to test the system.

Technologies:

* ASP.NET MVC 4
* Entity Framework Model First
* HTML 5,CSS 3,AJAX,jQuery,Bootstrap

## 2.3. Project management plan

### 2.3.1. Tasks

### 2.3.2. Task Sheet: Assignments and Timetable

### 2.3.3. All Meeting Minutes

<Put all your-team’s meeting minutes here as an appendix >

## 2.4. Convention Rules

This part requires of recommends certain practices for developing program in the C# language. The object of this coding standard is to have some positive effects:

* Avoidance of errors/bugs, especially the hard-to-find ones.
* Maintainability, by promoting some proven design principles.
* Maintainability, by requiring or recommending a certain unity of style.
* Performance, by discussing wasteful practices.

We will use the coding convention for C#.

<http://msdn.microsoft.com/en-us/library/ff926074.aspx>