

CARLETON UNIVERSITY

Department of Systems and Computer Engineering
SYSC4700 Telecommunications Engineering

2009

Professor Halim Yanikomeroglu

TERM PROJECT

An ICT (Information and Communication Technologies) based Health Care Concept circa 2025

**SUBMIT TWO HARD COPIES OF THE REPORT IN THE
ASSIGNMENT BOX BY 4:00 PM, TUESDAY, APRIL 7.**

Description

Information and communication technologies (ICT) are changing our lives in so many ways. In this project, an ICT-based health care (and medicine) concept will be articulated in a particular country circa 2025.

As you will see through an internet search, there is abundant information in this area in various forms (including projects, news items, surveys, tutorials, position papers, white papers, technical papers, NGOs, learned societies, products) on various aspects of the subject matter (such as on electronic medical records and robots in medicine).

The topic is intentionally set very broad. The first task for a group is to narrow down the scope and to define the group's *own* project topic with a suitable subtitle. In that sense, each project is expected to be somewhat different.

Each group will make two important decisions towards defining their topic.

- Although the title uses the term ICT, the groups are expected to focus more on the communications side. Therefore, a topic like “robots in medicine” is not recommended.

The keywords you may use to search the internet may include (but are not limited to)

- m-health
- e-health

- telemedicine
 - telehealth
- A country will be chosen as a case study; there are three possibilities:
- A developed country, such as Sweden or Canada
 - A developing country, such as Pakistan or Sri Lanka
 - An under-developed country, such as Somalia

Taking these two factors into account, a possible project subtitle may be “The Role of Wireless Sensor Networks in Telemedicine in Finland circa 2025”.

Note that the project is not on a current ICT-based health care and medicine concept, rather the groups will have to articulate the scenarios circa 2025.

Requirements

The report will address the followings, in separate sections if possible, in addition to addressing other issues at your discretion:

- Describe the narrowed down project topic, including
 - its importance in health care, and
 - the current state-of-the-art in this area.
- Describe the articulated ICT-based health care service circa 2025 in a conceptual way.
- Briefly describe the country chosen, especially the anticipated telecommunications infrastructure circa 2025.
- State the technology requirements (especially from communications perspective) for the concept under investigation circa 2025. For instance, it may be necessary to have a broadband wireless service (such as 4G+ cellular) or the FTTH (fiber-to-the-home) technology. Discuss these technology requirements in terms of
 - cost,
 - efficiency,
 - latency,
 - reliability.

Also identify any potential shortcomings of the necessary technologies.

- Comment on the future of the ICT-based health care concept you are investigating circa 2050. A brief qualitative discussion will be sufficient.

Report

A group is normally formed by two students. Three-member groups may be accepted as well; however, one-member or four-member groups are not accepted. It is your responsibility to establish a group.

There are three deadlines ahead of you:

- **Deadline 1:** midnight, Thursday, March 5. E-mail your group information to the course TA Akram Bin Sediq at akram@sce.carleton.ca. The only information required is the names of the students in your group. This e-mail must be copied to all group members.
- **Deadline 2:** midnight, Sunday, March 15. E-mail your group's narrowed down project topic to the course TA Akram Bin Sediq at akram@sce.carleton.ca.
- **Deadline 3:** 4:00 pm, Tuesday, April 7. Two copies of the final report due in the course assignment box.

Missing the first two deadlines will result in some penalty in your overall mark for this project.

Each group will write **one report**, and will submit it in two hard copies. **All group members will get the same mark.** It is up to your group to organize the work and allocate tasks to group members. Your group output will be a report which addresses the above issues. Include references (papers, books, internet, etc.), with enough information that they can be verified by readers.

Do not copy from other sources (especially from internet) or use others' ideas, unless they are acknowledged and properly referenced. Violating this rule amounts to plagiarism, which is a serious instructional offence (see "instructional offences" in the undergraduate calendar, and www.plagiarism.org for definitions and examples of plagiarism.). Reference to "other sources" also includes any overlap of your own work in other courses, such as fourth year projects, for example.

The report itself (without figures) should be no more than 10-15 pages of double-spaced text; you may put as many figures as you deem appropriate. Your marks will be based on the correct knowledge and persuasiveness revealed in your report, its organization, coherence and clarity, and use of references.