Strategic Use of Digital Information in Enterprise

Assignment 3:

Innovation: Apple Health App

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Q1: Problem definition

- ***Situation/environment where the solution is used***

  This solution is used by everyone who owns an Apple smartphone (iPhone), Apple smart watch (iWatch) and have access to the internet. Most important, the application used by people who are willing to monitor and enhance their physical health status.

- ***Problem addressed by the solution***

  In 2016, over 1.9 billion individuals aged 18 and above were overweight. Over 650 million of these individuals were obese[1]. Obese people, as compared to those with healthy weight, are at a higher risk for a variety of significant diseases and health issues, including the following: High blood pressure (hypertension), stroke, type 2 diabetes, and other conditions[2]. However, this might be avoided. Monitoring your health condition allows you to know how close you are to obesity and act.

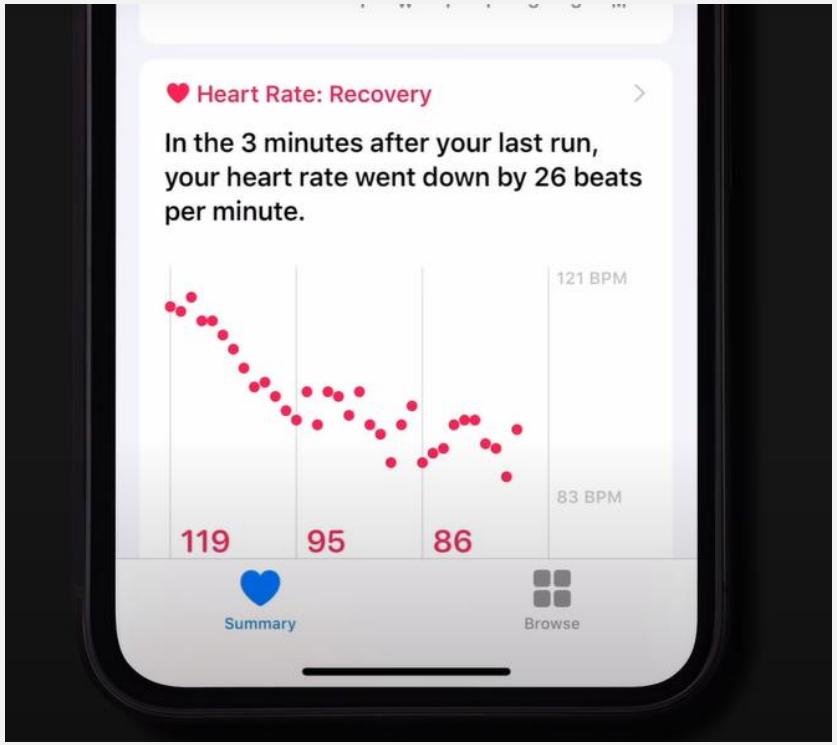
Q2.1: Solution description – the solution I selected

- ***The solution details***
  - **Product name:** Apple health application
  - **Company name:** Apple
  - **Reference:** [3]"Apple Health", *App Store*, 2022. [Online]. Available: https://apps.apple.com/us/app/apple-health/id1242545199 .
  - **Demo :** ***Apple Health application***

Q2.2: Solution description – How the solution work

Apple health is an application used in Apple's smartphones (iPhone) and Apple's smart watches (iWatch). initially the program ask the user to provide personal information such as: weight, height, age and gender. Next, the application measure the heartbeat and blood flow through iWatch, and the application calculate calories burned from the covered kilometers combined with personal data from walking, running, hiking or cycling exercises. After merging those outcomes with the information, you gave insights associated to yourself the application analyze how you improve compared to the past days.

For example, Sandrine is overweighted and starts to use Apple health application. She has an iPhone and iWatch. After starting Apple health app, It asks her to provide her personal data such as: weight, height, age and gender. The iWatch used to monitor her steps and heart rate and the connected iPhone used to analyze and present insights and trends from her data over time. Here is the screenshot example showing the data about how your heart rate recovery process after running as one of insights from the application.

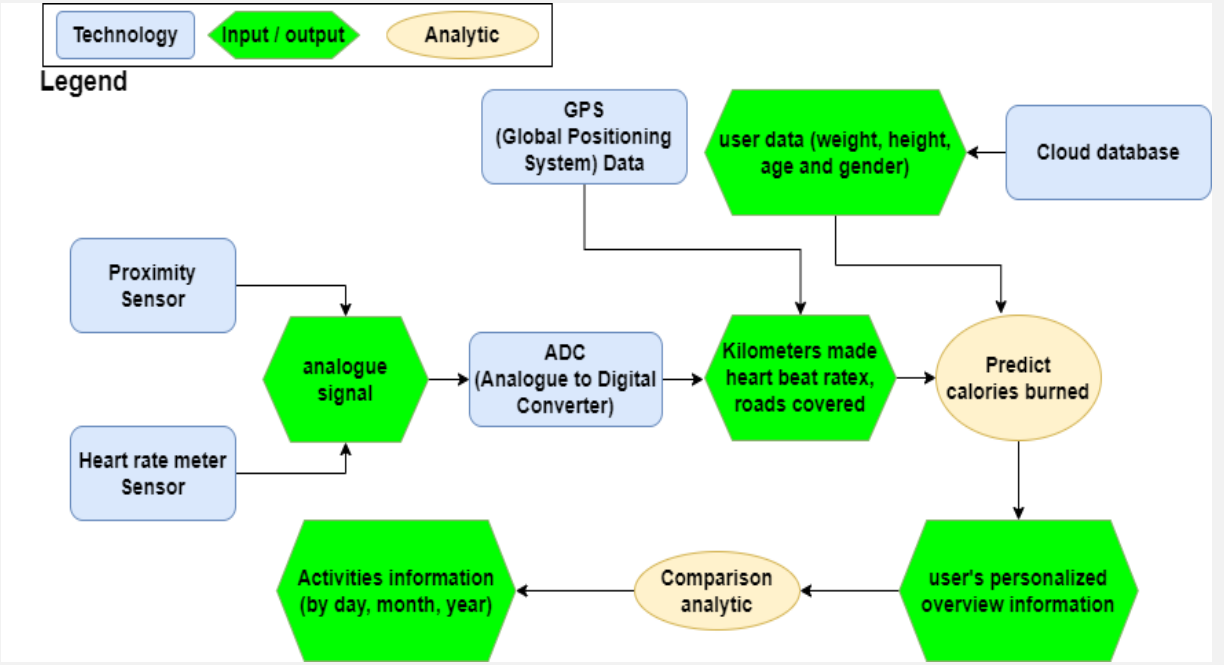


Q2.3: Solution description – Technologies & analytics used

The Apple health application uses several technologies such as: **GPS** (Global Positioning System), **heart rate monitoring** Sensors, **proximity** sensors **ADC** (Analog to Digital Converter).

After capturing data about heart rate and blood pressure from **heart rate sensor** and data of movements (either running, walking, hiking, or riding bicycle) from **proximity sensor** and the covered area from **GPS** the **ADC** convert the signal data into digital data. The system analyze those data and provide the roads with kilometers covered, calories burned according to the user's information (weigh, height, age and gender), and speed used.

Lastly, the application keep the records and if for instance you are in over-weight state, the application recommend how you can improve and get back to normal state if you make the same amount of exercises every day.



Q3.1: Solution evaluation : How the solution solve the problem

Exercise not only makes you live longer, but it also enables you live better. It may boost your mental and emotional functioning, as well as your productivity, in addition to strengthening your heart and muscles and warding against a variety of diseases[4][5]. By using Apple health application, a user get a change to monitor and improve his/her physical health. As we saw the more to level-up closer to the obesity the more we increase the chance of get several diseases.

People who use Apple health benefits more from it. First, the application keep records of the user's exercises. With that data, the application notify the user if he/she has been not active compared to the past days. This help users to maintain their weight by exercise regularly so that the user can not gain more weight that can led him/her to the obesity stage. Second, the application suggest number of calories can be burnt to reduce weight according to the user's information (weight, height, age, gender). This also can help people to maintain their weight and prevent them to get in overweight or obesity level. Lastly, the application help the user to grow and keep up a great habit of taking care of his/her body by exercise regularly.

Q3.2 & Q3.3: Solution evaluation

- ***Limitation/problem of the solution***
  - ✓ This application does not maximize the usefulness of all the collected data into more meaningful analytics or in integrating with third-party applications. Furthermore, the program does not recommend the user on how to enhance his or her current workout routine.
  - ✓ Another limitation is **Compatibility.** The Apple health application is not a cross platform application. It can be used only in apple's devices[6].

- ***How I would improve the solution***
  - ✓ I would provide more analytics from user's data. For example, providing the recommendation of exercises many people of the same physical health status likes do. Second, providing the shops to which a user can buy sports equipment from on map.
  - ✓ Samsung has similar solution named Samsung health app, it is available to all platform (IOS and Android) To overcome the compatibility limitation, I would make apple health application available to all platform.

Q4: This solution in Africa

- ***African environment***

  This solution is already used in Africa but on a small scare. Currently, the price of a used iPhone 10 is around 500$. Referring to Rwanda which had 2160$ GNI (Gross National Income) per capita, only 8.3% people own iPhone phones (IOS)[7]. This shows me how less Rwandans can afford iPhone phones. This is the same case in many African countries. Other than that, the solution can be fully used in Africa without an issue for the people how can afford the required devices.

- ***How I would improve the solution***

  To improve this solution to be used more in Africa, I would work on producing a cheap option for the people who can not afford those flagship phones and smart watches. To do that I would use cheap chipset to produce less expensive devices. Additionally, as Android has 84.4% of the Mobile operating system market share in Africa[8]. I would make Apple health available in android phones that has required sensors for application to work.

Reference

- [1]"Obesity and overweight", *Who.int*, 2022. [Online]. Available: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight.
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- [4]"Physical Activity", *Obesity Prevention Source*, 2022. [Online]. Available: https://www.hsph.harvard.edu/obesity-prevention-source/obesity-causes/physical-activity-and-obesity/ .
- [5]I. Medicine, F. Board and R. Solutions, *Physical Activity*. Washington: National Academies Press, 2015.
- [6]"iPhone Users and Sales Stats for 2022", *Backlinko*, 2022. [Online]. Available: https://backlinko.com/iphone-users#iphone-shipment-volumes .
- [7]"Operating System Market Share Rwanda | Statcounter Global Stats", *StatCounter Global Stats*. [Online]. Available: https://gs.statcounter.com/os-market-share/all/rwanda .
- [8]"Mobile Operating System Market Share Africa | Statcounter Global Stats", *StatCounter Global Stats*, 2022. [Online]. Available: https://gs.statcounter.com/os-market-share/mobile/africa .