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REPORT ASSIGNMENT 2

COMPUTING RESEARCH

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Class: GCD0606



ASSIGNMENT 2 FRONT SHEET

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Class	GCD0606	Assessor name	Phan Thanh Tra
Student declaration I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice.			
		Student's signature	Huy

Grading grid

P6	P7	M4	D3

☐ **Summative Feedback:**

☐ **Resubmission Feedback:**

Grade:

Assessor Signature:

Date:

Internal Verifier's Comments:

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Acknowledgments

After completing the research: “**Tool and strategy to help businesses manage products and improve the wellbeing of users**”, this report provides a more general view of the results achieved in the research process, from which to propose progressive solutions to implement future research.

I would like to thank teacher Phan Thanh Tra, who guided me through the process of completing this research.

With not much time as well as limited knowledge, the report cannot avoid mistakes. I look forward to the guidance and suggestions of teachers so that I can improve and supplement my knowledge, better serve the actual work in the future.

Finally, I wish you always full of health, happiness, and success in life.

Sincerely thanks!

1. Project's proposal (P6)

1.1. The vision of the project

Vietnam is the 2nd largest country in the world in exporting coffee, in which it ranks first in exporting Robusta coffee. However, Vietnam mainly exports raw materials (95%), only 5% for domestic consumer products. So, is the domestic market enough coffee to consume? And a recent disturbing fact is that the situation of dirty coffee rampant in the market has lost the confidence of domestic consumers. Dirty coffee is a type of soybean coffee, burnt popcorn mixed with dozens of additives, chemical flavors to form a coffee powder. The toxic substances when roasted popcorn, soybeans not only do not help alert and focus but more seriously cause adverse effects on consumers' health. Increasing living standards, consumers are more concerned about health issues and the quality of food hygiene and safety, especially for young people. According to statistics, each year Vietnam has about 250-500 cases of food poisoning, the main cause of poisoning is due to food contaminated with microorganisms (33-49%), food contaminated with chemicals (11-27%) and some other causes, more serious are the number of cancer patients in Vietnam ranked among the highest in the world. This shows that food hygiene and safety are at an alarming level and the demand for clean food and drinks is becoming urgent and necessary.

The introduction and understanding of research objectives was to help the project not be vague so that there are directional guidelines to accomplish the goal. When there are clear goals, the following steps have been guided: Research subjects, the scope of research, and appropriate research methods for the topic.

The research model can be applied to many different studies not only on computing research but also on social, human, and economic research topics. But the scope of the process also clearly identifies the methods from which to study the computing research that the research is doing.

With the research topic "**Tool and strategy to help businesses manage products and improve the wellbeing of users**", the above research process includes "**Studying the factors affecting the consumption behavior of pure coffee by young people in Da Nang City**" from which to make research insights. Based on the data, the study can produce better solutions and recommendations.

1.2. The requirements

Surveys outside the market can be easily noticed, besides the big branded coffee shops, nowadays popular coffee services such as coffee stroll, coffee shop toad ... also appear quite a lot because Convenient, cheap. Coffee is prepared in large jars in an icebox to keep it cold, then mixed for guests, adding milk sugar, foaming ice. These cups of coffee are all advertised as pure coffee ingredients, how to mix, no one knows.

In order to have delicious and delicious cups of coffee with a few thousand dong sold on the market, fake coffee production establishments mix a lot of additives and impurities such as corn, soybeans, areca grass, husks. baked coffee burns into the same coffee. These ingredients have created a fragrant, aromatic after roasting, and also have a bitter taste that consumers mistakenly believe is coffee.

The roasting of soybeans to create real coffee varieties disintegrate the nutritional components and produces substances that are toxic to users. The raging fake coffee also partly stems from consumption habits when the way of evaluating Vietnamese delicious coffee is still mainly based on aromas and additives.

Grasping weaknesses of Vietnamese consumers who prefer to use coffee with 4 characteristics "**thick, bitter, vicious, frothy**" so that producers often mix impurities to meet consumers' tastes and tastes.

So, the project must meet these requirements:

- **Choose the right research subjects:** Young people aged 18 to 30 years old use coffee in Da Nang City
- Questions closely related to the result
- The collected data is highly reliable
- Conclusions should be based on data assessed from SPSS
- The results must provide a solution to apply Digital-Wellbeing to products to change business behavior.
- **Report:** The report must cover all the requirements in the brief such as literature review, primary research, analyze the result, solution.

1.3. The deliverables

The products in the research are:

- **Research process:** Research process diagram
- **Research models:** Research models diagram
- **Build scales:** The table of scale
- **Number of samples:** The minimum number of research samples to study
- **Research methods:** Qualitative research and Quantitative research
- **Cost:** Table of the cost of researching and building the product
- **Assessment results:** Solutions for product development, pricing, distribution, marketing, and health
- **Application:** Problem-solving application using Digital-Wellbeing to change the behavior of the business

1.4. Success criteria

No.	Criteria	Describe	Result	Completed (%)	Status																																																																																																															
1	Complete initiating before June 1, 2020	<ul style="list-style-type: none">Project chartersMajor known RiskSetup communicate place	<p>Project Charters: In report Computing Research assignment 1 page 2</p> <p>1. The project charters</p> <p>Table 1. Project charter</p> <table><tr><th colspan="5">1. General Project Information</th></tr><tr><td>Project Name:</td><td colspan="4">COFFEE SUPPLY CHAIN MANAGEMENT SYSTEM</td></tr><tr><td>Executive Sponsors:</td><td colspan="4">GCD - Greenwich's Club Of Developers</td></tr><tr><td>Department Sponsor:</td><td colspan="4">University of Greenwich</td></tr><tr><td>Impact of the project:</td><td colspan="4">Tool and strategy to help businesses manage products and improve the wellbeing of users</td></tr><tr><th colspan="5">2. Project Team</th></tr><tr><td></td><th>Name</th><th>Role</th><th>Telephone</th><th>E-mail</th></tr><tr><td>Project Manager:</td><td>Tran Quang Huy</td><td>Team Leader</td><td>0795541090</td><td>huytqg@18457@fpt.edu.vn</td></tr><tr><td>Team Members:</td><td>Huynh Thai Hieu</td><td>Front-End</td><td>0905510623</td><td>huytqg@18457@fpt.edu.vn</td></tr><tr><td></td><td>Nguyen Cong Nhut</td><td>Front-End</td><td>0339778564</td><td>nhutncg@17202@fpt.edu.vn</td></tr><tr><td></td><td>Nguyen Quoc Tai</td><td>Back-End</td><td>0763037176</td><td>tainq@17261@fpt.edu.vn</td></tr><tr><td></td><td>Nguyen Van Minh Tri</td><td>Back-End</td><td>0905774231</td><td>trivmng@18384@fpt.edu.vn</td></tr><tr><td></td><td>Ngô Tiểu My</td><td>Designer</td><td>0939962359</td><td>myntg@18832@fpt.edu.vn</td></tr><tr><td></td><td>Phạm Trung Nam</td><td>DevOps</td><td>0939496498</td><td>namptg@18832@fpt.edu.vn</td></tr><tr><td></td><td>Nguyễn Minh Trí</td><td>Digital Marketing</td><td>0342288600</td><td>trivmng@18832@fpt.edu.vn</td></tr><tr><td></td><td>Bào Tấn Hải</td><td>Tester</td><td>0334463258</td><td>huytqg@18457@fpt.edu.vn</td></tr><tr><th colspan="5">3. Stakeholders</th></tr></table> <p>Major known Risks: In report Computing Research assignment 1 page 4, 82</p> <table><tr><th colspan="2">Major Known Risks</th></tr><tr><th>Risk</th><th>Risk Rating (Hi, Med, Lo)</th></tr><tr><td>Members quit their jobs</td><td>High</td></tr><tr><td>Lack of funding</td><td>High</td></tr><tr><td>Members have not enough experience</td><td>Medium</td></tr><tr><td>Survey data is incomplete</td><td>Medium</td></tr><tr><td>Not enough equipment/device for members</td><td>Low</td></tr></table> <p>Communicate place: In report Computing Research assignment 1 page 4</p> <table><tr><th colspan="2">5. Communication Strategy</th></tr><tr><td>- Framework:</td><td>Scrum</td></tr><tr><td>- Communication:</td><td>Slack</td></tr><tr><td>- Tracking:</td><td>Trello</td></tr><tr><td>- Code controller and stored:</td><td>GitHub</td></tr><tr><td>- A document stored:</td><td>Google Drive</td></tr></table>	1. General Project Information					Project Name:	COFFEE SUPPLY CHAIN MANAGEMENT SYSTEM				Executive Sponsors:	GCD - Greenwich's Club Of Developers				Department Sponsor:	University of Greenwich				Impact of the project:	Tool and strategy to help businesses manage products and improve the wellbeing of users				2. Project Team						Name	Role	Telephone	E-mail	Project Manager:	Tran Quang Huy	Team Leader	0795541090	huytqg@18457@fpt.edu.vn	Team Members:	Huynh Thai Hieu	Front-End	0905510623	huytqg@18457@fpt.edu.vn		Nguyen Cong Nhut	Front-End	0339778564	nhutncg@17202@fpt.edu.vn		Nguyen Quoc Tai	Back-End	0763037176	tainq@17261@fpt.edu.vn		Nguyen Van Minh Tri	Back-End	0905774231	trivmng@18384@fpt.edu.vn		Ngô Tiểu My	Designer	0939962359	myntg@18832@fpt.edu.vn		Phạm Trung Nam	DevOps	0939496498	namptg@18832@fpt.edu.vn		Nguyễn Minh Trí	Digital Marketing	0342288600	trivmng@18832@fpt.edu.vn		Bào Tấn Hải	Tester	0334463258	huytqg@18457@fpt.edu.vn	3. Stakeholders					Major Known Risks		Risk	Risk Rating (Hi, Med, Lo)	Members quit their jobs	High	Lack of funding	High	Members have not enough experience	Medium	Survey data is incomplete	Medium	Not enough equipment/device for members	Low	5. Communication Strategy		- Framework:	Scrum	- Communication:	Slack	- Tracking:	Trello	- Code controller and stored:	GitHub	- A document stored:	Google Drive	100%	Completed
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3	Complete Executing before August 10, 2020	<ul style="list-style-type: none">• Survey• Analysis data in SPSS• Build an application	Survey: At least 150 people participated in the survey SPSS: Use algorithms Application: Build a website	100%	Completed																																																																						

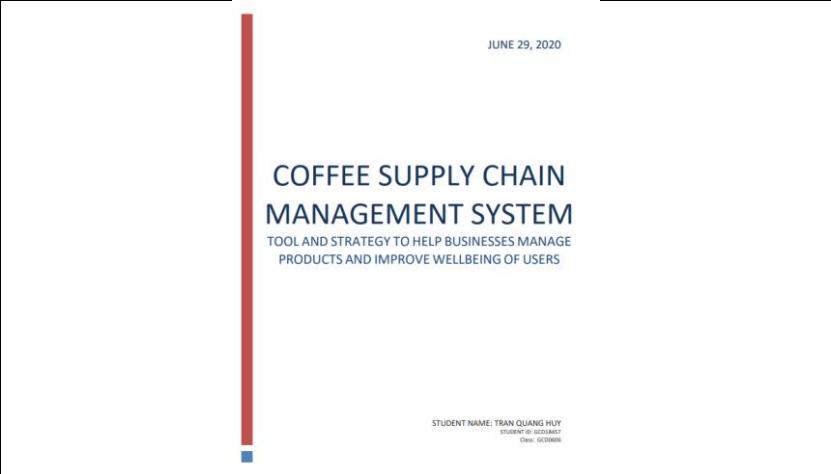
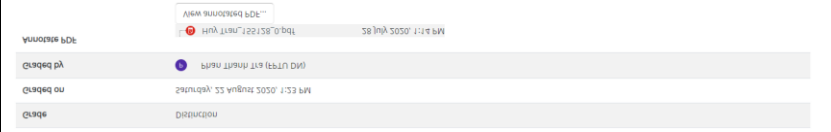
4	Complete delivery before August 17, 2020	<ul style="list-style-type: none"> Result of the survey Deploy application 	Result of the survey: report assignment 1 Application: https://greechain.herokuapp.com/	100%	Completed
5	Complete document assignment 1 before June 30, 2020	<ul style="list-style-type: none"> Report assignment 1 			
6	Get grade Distinction	Submit assignment 1 and get Distinction for assignment 1		100%	Completed

Table 1. The success criteria

1.5. Specify the deadlines

- **Milestone one:** Initiating - Complete the project charter on June 1, 2020
- **Milestone two:** Planning - Complete the sequence of jobs, assigning tasks, appropriate resource, evaluating, assessing risk and funding on June 10, 2020
- **Milestone three:** Executing:
 - **Research and survey:** Complete on July 14, 2020
 - **Design:** Complete all the design of the project on July 18, 2020
 - **API:** Complete API on July 30, 2020
 - **Blockchain:** Complete smart contract on August 4, 2020
 - **UX/UI:** Complete UX/UI on August 9, 2020
 - **Testing:** Complete testing on August 11, 2020
- **Milestone four:** Delivery and maintenance - August 17, 2020



Figure 1. Project milestone

1.6. Get authorization

The report has been sent to Ms. Phan Thanh Tra to review and grading.

The questionnaires when sent to young people aged 18-30 are pre-approved. And all respondents who answered the questions accepted that the contents of the survey have been used to research and develop related products. The information provided by young people has to been kept confidential and not publicly available.

2. Research Process (M4)

2.1. Reflection on the merits, limitations and potential pitfalls (p7)

- **Preliminary research in the coffee supply chain management system**

Interview (n = 10): an individual interview with a hand-to-hand discussion framework to discuss the factors affecting the behavior of coffee consumers in Da Nang City. Interview results have been used or developing questionnaires and research models.

- **Qualitative research**

After building the questionnaire, conduct a direct survey (n = 20) to check the validity of the questionnaire. From there, adjust the questionnaire appropriately.

Begin the qualitative research process, conduct research on searching and filtering primary data by the following methods:

- **Direct observation:** observing coffee use behavior of consumers at coffee shops in Danang city.
- **Personal interview:** Online personal interviews and direct personal interviews. Conduct online interviews through online communication to collect data
- **Quantitative research:** The survey by a questionnaire including an online survey and a direct survey

Quantitative research was conducted to collect quantitative information on factors affecting the behavior of young coffee consumers in Danang. The results have been a database to test the research model and hypotheses, testing consumers in Da Nang city are satisfied with the coffee that consumers are using or not.

Subjects surveyed: young customers aged 18 to 30 using coffee in takeaway cafes, on-site roaster cafes, and popular in Danang city like Milano, Cong Cafe, Long Cafe, Hancoffee Original, The Coffee House and student of university of Greenwich Viet Nam (Da Nang Campus).

Research process:

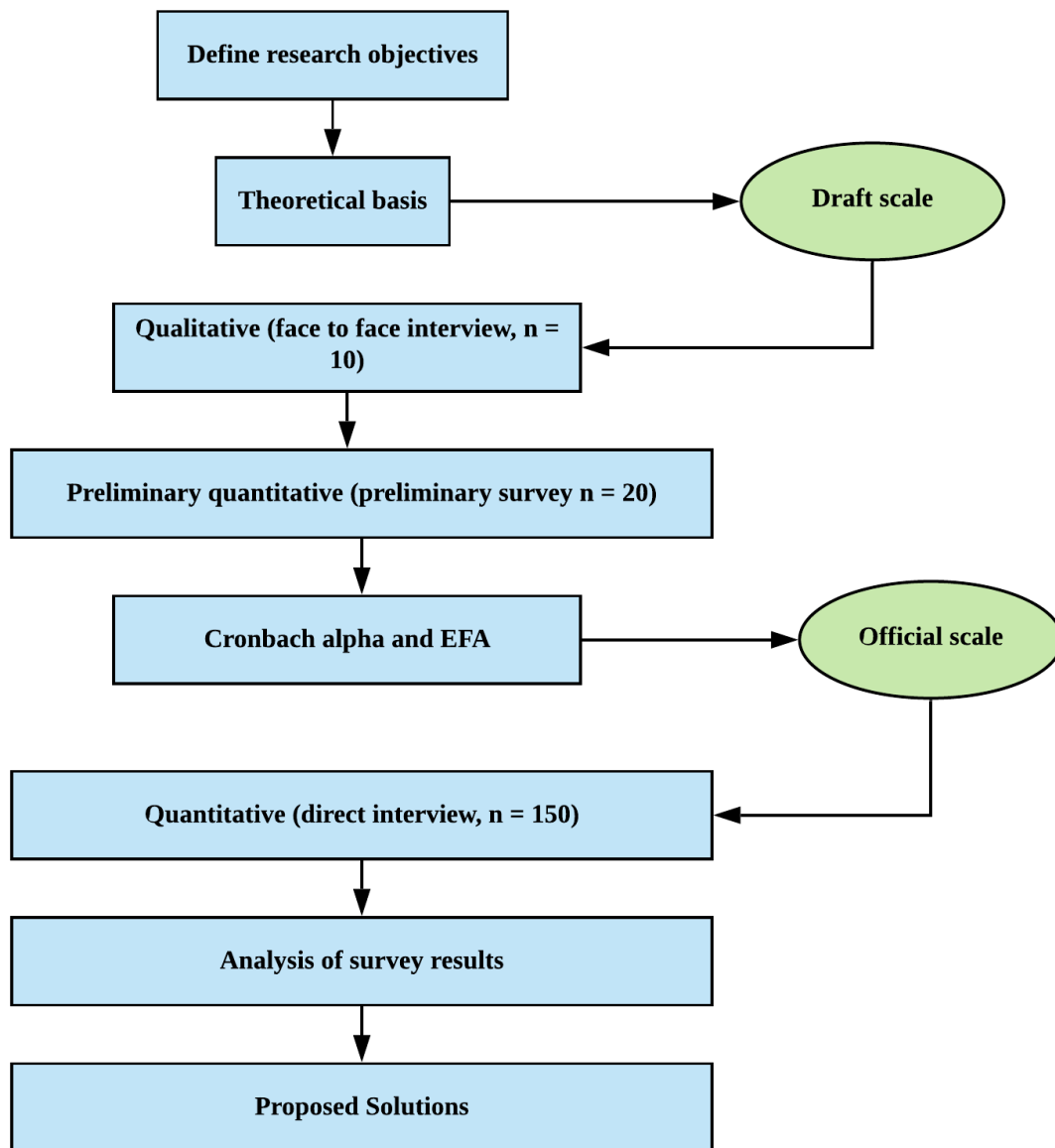


Figure 2. Research process

In the paper, secondary research is used as a framework to form the research steps as well as the concepts to evaluate the results, but there are also dangers when using secondary research.

- **Quality of Researcher:** Research conducted using primary methods are largely controlled by the marketer. However, this is not the case when it comes to data collected by others. Consequently, the quality of secondary research should be scrutinized closely since the origins of the information may be questionable. Organizations relying on secondary data as an important component in their decision-making must take extra steps to evaluate the validity and reliability of the information by critically evaluating how the information was gathered, analyzed, and presented.
- **Incomplete Information:** Many times, a researcher finds that research that appears promising is fake information released by the research supplier. This often occurs when a small portion of a study is disclosed, often for free, but the full report, which is often expensive, is needed to gain the full value of the study.
- **Not Timely:** Caution must be exercised in relying on secondary data that may have been collected well in the past. Out-of-date information may offer little value especially for companies competing in fast-changing markets.
- **Not Specific to Researcher's Needs:** Secondary data is often not presented in a form that exactly meets the marketer's needs. Because of this difference, the results may not be useful.

2.2. The roles of Literature review

My literature review gives readers an understanding of scholarly research on the topic.

In my literature review I have:

- Demonstrated that I am a well-informed scholar with expertise and knowledge in the field by giving an overview of the current state of the literature
- Found a gap in the literature, or address a business or professional issue. The literature review has illustrated how my research contributes to the scholarly conversation
- Provide a synthesis of the issues, trends, and concepts surrounding my research
- As I read and write initial drafts, I found new threads and complementary themes, at which point I have been returned to search, find out about these new themes and incorporate them into my review.

In the Literature review the following things I did:

Action	Methods
Ask myself question	I asked myself the question about: <ul style="list-style-type: none">• Purpose: 'What is the specific thesis, problem, or research question that my literature review helps to define?'• Type: 'What type of literature review am I conducting? Am I looking at issues of theory? methodology? policy? quantitative research? qualitative research? etc.'• Scope: 'What is the scope of my literature review?'• Quality: 'How good was my information seeking?' wide enough to ensure I have found all the relevant material, and narrow enough to exclude irrelevant materials?• Analysis: 'Have I critically analyzed the literature I use? Do I follow through a set of concepts and questions, comparing items to each other in the ways they deal with them?'• Contrary: 'Have I cited and discussed studies contrary to my perspective?'
Know key authors	Find out all related works done by key authors in a certain time frame.
Write down the main terms and their definitions	Search for the same terms with various definitions, and in the meantime, search for similar definitions with different terms. Then compare them to each other to find out the patterns and differences.
Record key definitions and their context	Look for patterns and frameworks in what is written about a topic such as a context such as social, political, and historical.
Create a map of my sources	Draw a map and link it with my sources.
Start writing	After analysis and evaluation of my literature, be attentive to tell my audience that I am writing a literature review.

Table 2. Action in a literature review

2.3. The project plans

2.3.1. Project communication

Communication	Frequency	Goal	Owner	Audience
Email				
Project status report	Weekly	Review project status and discuss potential issues or delays	Project manager	Project team + Project sponsor
Meetings				
Team stand-up	Daily	Discuss what each team member did yesterday, what they have done today and any blockers	Project manager	Project team
Project review	A milestone	Present project deliverables, gather feedback and discuss next step	Project manager	Project team + project sponsor
Post-mortem meetings	At the end of the project	Assess what worked and what did not work and discuss actionable takeaways	Project manager	Project team
Team Gantt				
Task progress updates	Daily	Share daily progress made on project tasks	Project manager	Project team
GitHub				
Update source code	Daily	Commit source code on GitHub for each function.	Project manager	Project team
Pull source code	Daily	Keep track and pull source code from GitHub that team had done yesterday	Project manager	Project team
Skype				
Communication channel	Daily	Talk and exchange information about the project	Project manager	Project team

Table 3. Project communication

2.3.2. Project work breakdown structure (WBS)

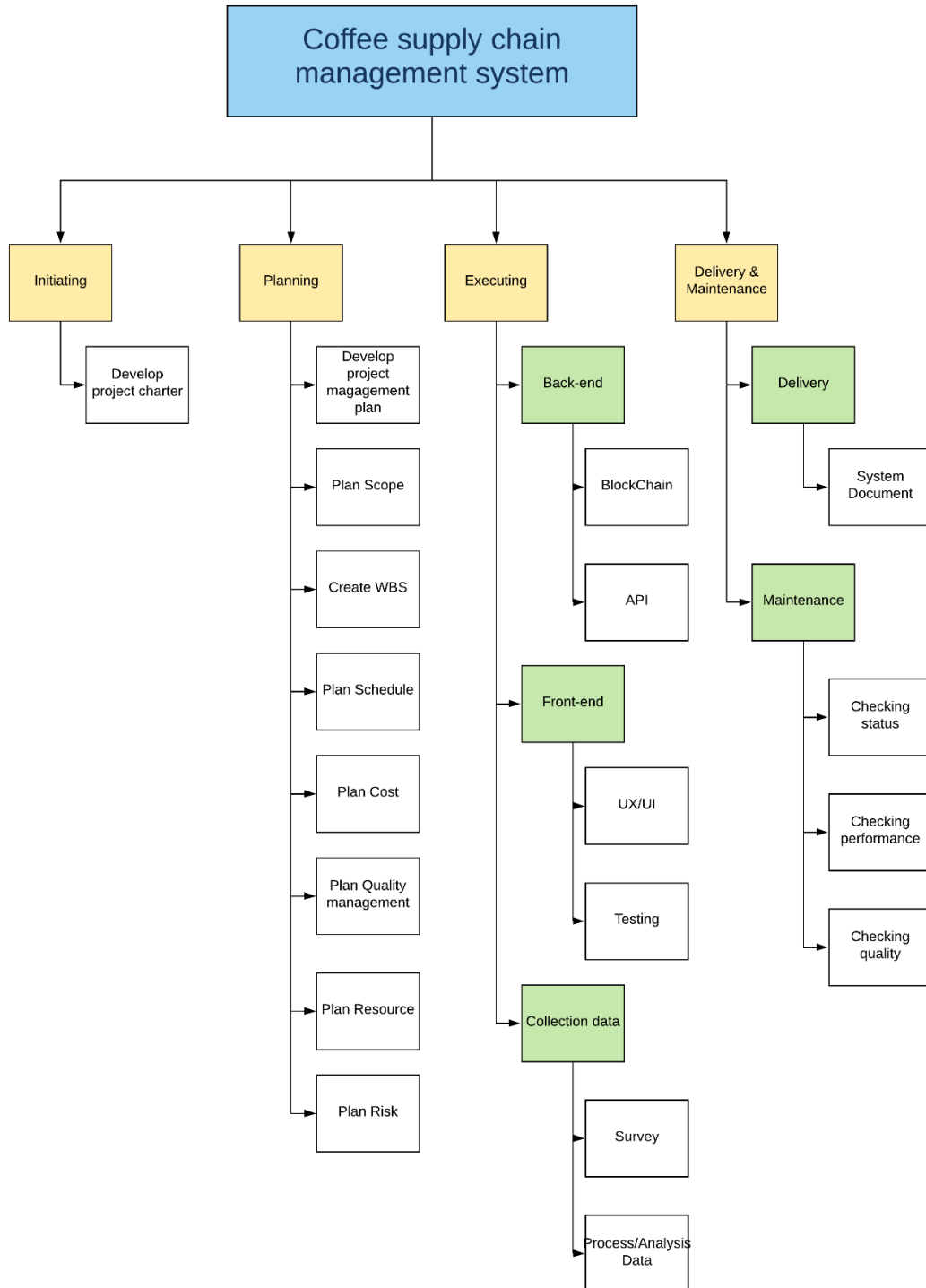


Figure 3. Project work breakdown structure (WBS)

2.3.3. Project cost planning

Phase	Process	Members	Work hours	Cost per hour	Total
Initiating					
	Develop Project Charter	5 members	24 hours	\$5	\$600
Planning					
	Develop Project Management Plan	4 members	16 hours	\$5	\$480
	Plan Scope	3 members	16 hours	\$5	\$240
	Create WBS	1 member	12 hours	\$5	\$70
	Plan Schedule	2 members	72 hours	\$5	\$720
	Plan Cost	3 members	20 hours	\$5	\$300
	Plan Quality management	3 members	18 hours	\$5	\$270
	Plan Resource	3 members	10 hours	\$5	\$150
	Plan Communication	1 member	10 hours	\$5	\$50
	Plan Risk	3 members	24 hours	\$5	\$360
Executing					
Collection data	Survey	2 members	60 hours	\$4	\$480
	Processing data	2 members	20 hours	\$4	\$160
	Data analysis	3 members	40 hours	\$5	\$600
Back-end	Smart contract	2 members	528 hours	\$6	\$6336
	NodeJs	2 members	80 hours	\$5	\$800
	Abi	3 members	340 hours	\$6	\$6,120
	Machine Learning	2 members	360 hours	\$5	\$3,600
	API	2 members	80 hours	\$5	\$800
Front-end	UX/UI	2 members	40 hours	\$5	\$400
	Testing	3 members	18 hours	\$4	\$216
Delivery & Maintenance					
Delivery	System Document	4 members	100 hours	\$3	\$1,200
Maintenance	Checking status	1 member	40 hours	\$4	\$120
	Checking performance	1 member	40 hours	\$4	\$120
	Checking quality	2 members	60 hours	\$5	\$600
Total					\$25,192

Table 4. Project cost planning

2.3.4. Project update planning

- **Time Updates**

In the first phase of the study, the time is divided equally among the section's literature review, secondary research. But at the beginning of the reality, the group gathered and allocated the time more appropriately.

Time has been deducted from studying theories to spend more on data surveys and data analysis.

The time is edited from 1 week for literature review and secondary research to 4 days.

- **Updating Costs**

The costs incurred in the research process are all that the group has not had a plan to calculate in advance.

The timely change of the cost plan helps the team to ensure the progress as well as the interests of the team members to deliver the best results.

The additional cost items are mainly included in the Executing section such as data collection and website development.

The adoption of new technologies to incorporate into the solution also causes huge cost changes such as BlockChain technology and AI.

2.4. Meeting with tutor

Each week team research met Ms. Phan Thanh Tra twice on Tuesday and Saturday at 12:50 pm to discuss the progress of the project. At the same time, Ms. Phan Thanh Tra checked how the group's progress has been achieved. Weekend on Saturday is a stand-up session to report and answer the difficulties faced by the group.

Recently, the group had private discussions with Ms. Phan Thanh Tra to review the whole process as well as the report.

Thanks to building a specific time plan and overcoming problems while researching meeting with Ms. Phan Thanh Tra, the team was able to come up with a complete research paper and related technology product.

Daily exchanges are held through **Facebook Messenger** and Stand-up is usually hosted on **Google meeting**.

2.5. Choosing participations

There are many methods of sample selection such as applying the methods of existing surveys, consulting experts, people with experience in the field of market research or applying the existing sample calculation formulas. In the study, Factors affecting wellbeing and coffee consumption behavior of consumers in Da Nang city, the researchers decided to use the following formula to calculate the number of available samples as follows:

$$Y = 5n + 20$$

Y: Minimum number of samples to survey

n: Number of observed variables

Research subjects: Consumer's behavior of customers aged 18 - 30 years old in Da Nang City.

After the process of surveying the coffee business in Da Nang city, the study proposed 07 scales affecting the use of pure coffee. Each scale has some specific observation variables and has been presented in the following table:

No.	Scale	Number of observed variables
1	Branding factor and product	5
2	Perceptible price factor	3
3	Individual factor	2
4	Distribution density	2
5	Marketing factor	3
6	Health when use Product	5
7	Consumer behavior	4
Total		24

Table 5. The scale of research

- The total number of observed variables in the proposed group is 24, thus, applying the above formula we have **$Y = 24 \times 5 + 20 = 140$**

Therefore, the minimum number of research samples to study is **140 samples**

By participating in a survey, they can play an active role in educating about health. This can result in an improvement in the quality of life. Research volunteers gain a sense of gratification from their contributions to society and hope that the future will be brighter due to a wider range of options in using coffee.

2.6. Present research result

Charts used in the research report are mostly **pie charts** because:

- There is only one data series.
- None of the values in my data are negative.
- There is almost no value in the data that has a zero value.

Research data in the **pie chart** clearly shows the correlation as well as the value that the topic needs to analyze. In this way, readers can easily see the difference between the values and make judgments and ratings for each chart.

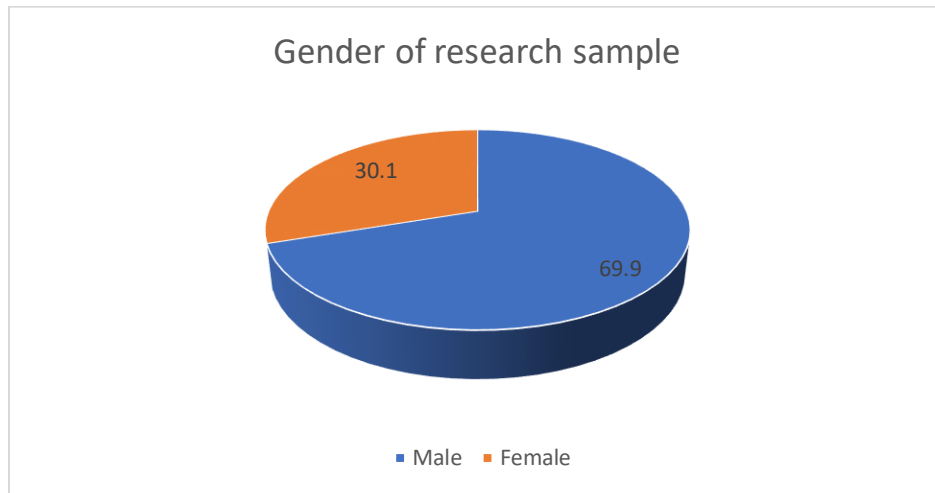


Figure 4. Gender of the research sample

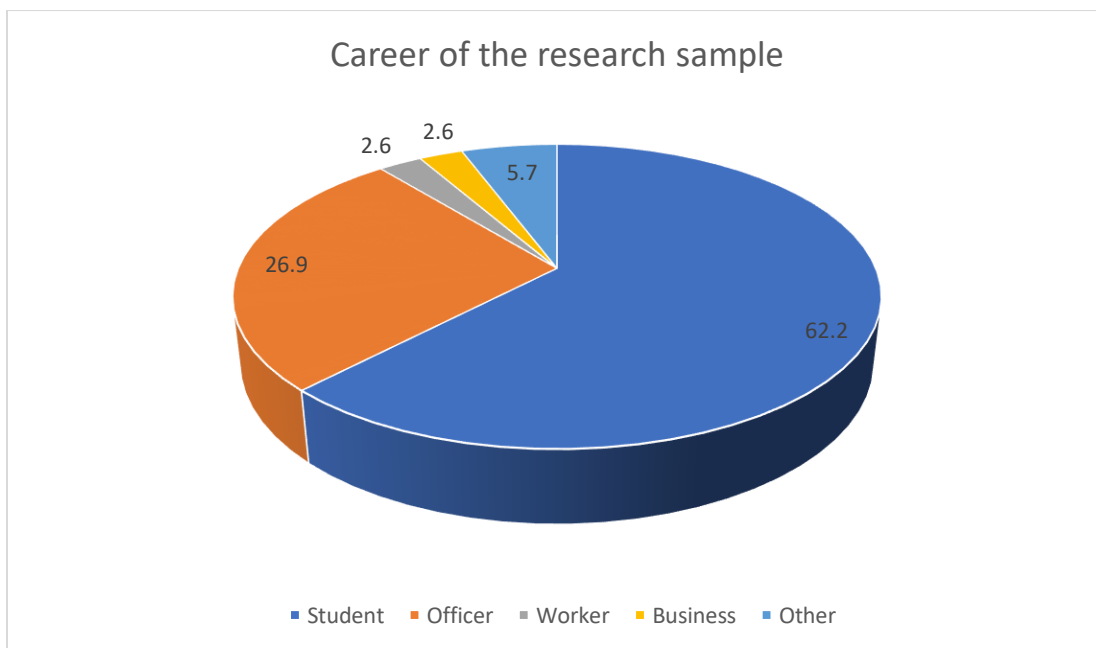


Figure 5. The career of the research sample

Tables are also used to show the results of data analysis from SPSS. When using tables, readers can easily access specific numbers for each criterion. Different from the pie charts that generally illustrate, the tables used in this study indicate more data.

		Income			
		Under 1.5m	From 1.5m to 3.0m	From 3.0m to 5.0m	Over 5m
Frequency of coffee use in 1 week	Less than 3 times	12.6%	33.7%	32.6%	21.1%
	From 3 to 5 times	4.7%	20.6%	45.9%	28.8%
	From 6 to 8 times	6.4%	17.0%	31.9%	44.7%
	Over 8 times	0.0%	10.0%	10.0%	80.0%

Table 6. Table of coffee consumption levels in 1 week and income of research sample

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	Df	Sig. (2-tailed)
THx	Equal variances assumed	.114	.736	.367	320	.714
	Equal variances not assumed			.375	191.938	.708
GCx	Equal variances assumed	2.113	.147	.723	320	.470
	Equal variances not assumed			.682	160.875	.496
CNx	Equal variances assumed	.003	.959	.077	320	.939
	Equal variances not assumed			.078	184.452	.938
PPx	Equal variances assumed	.865	.353	-.375	320	.708
	Equal variances not assumed			-.382	190.244	.703
CTx	Equal variances assumed	2.114	.147	.654	320	.513
	Equal variances not assumed			.686	203.826	.493
SKx	Equal variances assumed	1.999	.158	.650	320	.516
	Equal variances not assumed			.679	201.939	.498

Table 7. Test the difference of impact factors according to customers' gender

3. Consider other research approach and improvements in future research (D3)

3.1. Consider another research approach

Research on the topic "**TOOL AND STRATEGY TO HELP BUSINESSES MANAGE PRODUCTS AND IMPROVE WELLBEING OF USERS**" in addition to the research methods and research procedures outlined in report assignment 1. Accessible research in the other direction by consulting the experts. Researchers will develop in a new direction from the point of view.

Research-based on the opinions of experts has many positive and negative sides.

- **The positive side** is that based on the opinion of experts, the study will have a different view of the results, the analysis will have stricter defense points and the survey data will have high reliability. rather than surveying consumers.
- **The negative side** is that the expert's opinion is not necessarily consistent with consumer surveys on coffee consumption. Besides, opinions from experts are only subjective but not fully understood. set of real situations.

3.2. Improvement in future research

3.2.1. Time management and planning

Certain activities might be too large or complex for a reliable duration estimate. If an activity takes up more than 10 percent of the project schedule, that I might want to break it into several different tasks. I can use a work breakdown structure to reduce these activities into smaller, more manageable tasks. Doing this enables you to set priorities and estimate the duration of tasks more accurately. A work breakdown structure also is useful for building accountability, because you can assign specific tasks to designated project participants.

Bottom-up estimating is an extremely helpful technique in project management as it allows for the ability to get a more refined estimate of a particular component of work. In bottom-up estimating, each task is broken down into smaller components. Then, individual estimates are developed to determine what specifically is needed to meet the requirements of each of these smaller components of the work. The estimates for the smaller individual components are then aggregated to develop a larger estimate for the entire task as a whole. In doing this, the estimate for the task as a whole is typically far more accurate, as it allows for careful consideration of each of the smaller parts of the task and then combining these carefully considered estimates rather than merely making one large estimate which typically will not as thoroughly consider all of the individual components of a task. In general, the smaller the scope, the greater the accuracy.

These five steps will send the research on the way to successful bottom-up estimating:

- Identify All Project Required Tasks
- Estimate All Tasks Identified in Your WBS or Project Activity Definition
- Identify Task Dependencies
- Identify the Resources Required to Complete All Tasks
- Determine When Resources Should Complete These Tasks

3.2.2. References

Collecting sources for a research paper can sometimes be a daunting task. When my research, it's often a good idea to begin with common search engines such as **Google**, and general descriptions like I can find on Wikipedia. Often though these are not the sources I ultimately want in your paper.

Some tips for getting from this beginning research to finding “good” sources:

- Make a list of research terms I can use when searching in the library or even online. Start with my core list, but also add other keywords and phrases that I notice as my research.
- Review the works cited or bibliography section of sources that have already been helpful.
- Think about the kind of sources required by the assignment and also the kind of sources that are “good” for questions or topics. Many library search engines and databases have the option to return only “peer-reviewed” or “scholarly” sources. Which are sources that have been read by other scholars before being published.

3.2.3. Risk management

Even the most carefully planned project can run into trouble. No matter how well our team planning, my project can always encounter unexpected problems. Team members get sick or quit, resources that I was depending on turn out to be unavailable, even the weather can throw you for a loop. So, does that mean that our team is helpless against unknown problems? I can use risk planning to identify potential problems that could cause trouble for my project, analyze how likely they are to occur, take action to prevent the risks you can avoid, and minimize the ones that I can't.

A risk is an uncertain event or condition that might affect your project. Not all risks are negative. Some events (like finding an easier way to do an activity) or conditions (like lower prices for certain materials) can help your project. When this happens, we call it an opportunity; but it's still handled just like a risk.

There are four basic ways to handle a risk:

- **Avoid:** The best thing you can do with risk is to avoid it. If you can prevent it from happening, it definitely won't hurt your project. The easiest way to avoid this risk is to walk away from the cliff, but that may not be an option on this project.
- **Mitigate:** If you can't avoid the risk, you can mitigate it. This means taking some sort of action that will cause it to do as little damage to your project as possible.
- **Transfer:** One effective way to deal with a risk is to pay someone else to accept it for you. The most common way to do this is to buy insurance.
- **Accept:** When you can't avoid, mitigate, or transfer risk, then you have to accept it. But even when you accept the risk, at least you've looked at the alternatives and you know what will happen if it occurs. If you can't avoid the risk, and there's nothing you can do to reduce its impact, then accepting it is your only choice.

Risk category	Risk	Responsible by	Risk rating
Technical	Requirement	Project team	Medium
	Technology	Technical team	High
	Interfaces	Developer team	Medium
	Performance	Project team	High
	Quality	Project team	High
External	Samples	Project manager	Medium
	Contract	Project manager	Medium
	Market	Marketing team	High
	Supplier	Project team	Low
Team	Project Dependencies	Project team	Medium
	Logistics	Project team	Medium
	Resources	Project manager	Medium
	Budget	Project manager	High
Project management	Planning	Project team	Medium
	Schedule	Project team	Medium
	Estimation	Project manager	High
	Controlling	Project manager	Medium
	Communication	Project team	Low

Table 8. Project risks

3.2.4. Cost management plan

Costs for this project will be managed at the fourth level of the Work Breakdown Structure (WBS). Control Accounts (CA) will be created at this level to track costs. Earned Value calculations for the CA's will measure and manage the financial performance of the project. Although activity cost estimates are detailed in the work packages, the level of accuracy for cost management is at the fourth level of the WBS. Credit for work will be assigned at the work package level. Work started on work packages will grant that work package with 50% credit; whereas, the remaining 50% is credited upon completion of all work defined in that work package. Costs may be rounded to the nearest dollar and work hours rounded to the nearest whole hour.

Cost Performance Index (CPI) and Schedule Performance Index (SPI) will be reported on a monthly basis by the Project Manager to the Project Sponsor & Stakeholders:

- Cost variances of +/- 0.1 in the cost and schedule performance indexes will change the status of the cost to cautionary; as such, those values will be changed to yellow in the project status reports.
- Cost variances of +/- 0.2 in the cost and schedule performance indexes will change the status of the cost to an alert stage; as such, those values will be changed to red in the project status reports.

This will require corrective action from the Project Manager in order to bring the cost and/or schedule performance indexes below the alert level. Corrective actions will require a project change request and be must approved by the Project Sponsor before it can become within the scope of the project.

Conclusion

The study "**Tool and strategy to help businesses manage products and improve the wellbeing of users**" is the first study I do about Digital-Wellbeing. During the research, I have learned more knowledge and skills. The research results have reflected relatively fully the aspects that the research aims at.

Besides, the implementation of research is facing many difficulties due to cost and time. Because of limited resources, the research can not go in-depth to find out other relevant content.

Solutions to develop the research are outlined in this report. I believe that the following studies will be more successful and achieve more results in future research.