

**Zen Maker Lab's Project Management Plan for  
Summer Camps Outside of North Vancouver**

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**DEDICATION**

*Sometimes, challenges in life come at the same time, but the people around us are the ones who lift us up. Thanks to friends, colleagues and family, whose support, guidance, and understanding were invaluable when I needed them the most during the process of this thesis. Thanks to my son Santiago Martínez Cifuentes, who ignited my spirit, not knowing that his own struggle as a student in a foreign country was an example for me not to give up. And, I want to especially thank David Jones for all his unconditional trust, support, and kindness. He suggested I take studies in project management. He believed that I had good potential. I did not know what to do, and he taught me, "Where there is a will, there is a way."*

*And, thanks to the universe for giving me more time with my mom.*

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*"If you're going through hell, don't stop." Winston Churchill*

*Covid has affected everything around me, but it has shown me that we can overcome almost anything if we are surrounded by good people who are ready to work and create new opportunities for all situations and others around. If there are dreams or projects to develop, and if we believe in ourselves, the universe or God will put before us the road to move forward.*

*Natalia Torres, thank you so much for your patience, help, and interest during my process of learning Microsoft Projects.*

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### Abstract

Since 2013 Zen Maker Lab (ZML) has been delivering STEAM (science, technology, engineering, art, and math) classes. STEAM has been growing in the last decade; while some competitors still expanded during this time, many of these physical STEAM learning centers had to temporarily close their businesses, reduce their offerings, and switch to online summer camps. For that reason, Zen Maker Lab planned its strategy around expanding its face-to-face summer camp offerings, anticipating possibly less competition and a larger market of parents that wanted to register their children so they could have some more social interaction. ZML's STEAM camps offering will benefit parents and children because they comply with the high COVID management safety protocols, announced by the province of British Columbia, and guarantee a new learning experience throughout the DesignMakePlay methodology developed by the company facilitating children's learning process. The cities considered in the Project Management Plan expansion for Summer Camps are Victoria, Edmonton, and Calgary; based on the information from Statistics Canada regarding the population profile. Two important findings from the project are the implementation of Human Resources (HR) and engagement-marketing procedures to facilitate the introduction of ZML in the new markets. Furthermore, note that the information presented in this document will be used by the sponsor as a Project Plan template to continue launching summer camps outside of Vancouver for future years.

*Key words: STEAM education, STEAM education in Canada, Project Management Plan, Human Resources Process, summer camps in Vancouver, Summer Camps, Zen Maker Lab*

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**ABBREVIATIONS AND ACRONYMS**

(A.B)	Alberta
(B.C)	British Columbia
(BCIT)	British Columbia Institute of Technology
(CPR)	Cardiopulmonary resuscitation Certificate – First Aid
(CMU)	Carnegie Mellon University
(Co-op)	Co-operative education. It combines education with a paid work term
(FGP)	Final Graduation Project
(IB)	International Baccalauréat
(KSAO)	Knowledge, Skills, Abilities, and Other Characteristics
(NSF)	National Science Foundation
(PISA)	Program for International Student Assessment
(PMI)	Project Management Institute
(STEAM)	Science, Technology, Engineering, Art, and Math
(TIMSS)	Trends in International Mathematics & Science Study
(U.S)	United States
(UCI)	University of International Cooperation
(UBC)	University of British Columbia
(UVIC)	University of Victoria
(WBS)	Work Breakdown Schedule
(ZML)	Zen Maker Lab
(RACI)	Responsible, Accountable, Consult, and Inform
(COP 1)	Co-op student

## EXECUTIVE SUMMARY

Zen Maker Lab (ZML) is a private local business that started operations in 2013 to provide education in STEAM (Science, Technology, Engineering, Art, and Math) to kids, youth, and adults in North Vancouver, British Columbia, Canada. All classes and courses at ZML are delivered by engineers, designers, and entrepreneurs with experience in their industry and an interest in education. The founder and president of the organization, David (Cyri) Jones, is a business professor and entrepreneur who has found that education and technology are essential to children and youth to guarantee social growth and development. ZML has taught STEAM programs to more than 10,000 children, youth, and adults in different capacities in approximately 100 schools in Vancouver's Lower Mainland. As well, it was one of the first maker spaces in North America focused on children's programs.

However, in the last three years, education has changed substantially in Canada due to the fast growth of technology worldwide (Domínguez). To compete with global demand, provincial governments across Canada decided to transform and adjust their curriculum, and in British Columbia, one of the areas that highlight the relevance of STEAM is the recently launched Applied Design Skills and Technologies curriculum (Government of British Columbia, n.d.). Private and public schools started building their own maker spaces and began to find their champions in technology to train their instructors, but this process sped up due to Covid-19 when millions of students across Canada had to turn to online learning. This was an opportunity for Zen Maker Lab (ZML) to support teachers during this transition. However, ZML was also impacted, but at the same time, the company tried to find innovative alternatives such as the production of face shields and project kits, by launching a live stream show called DesignMakePlay.

ZML's competitors, whose educational offerings are more "cookie-cutter," standard, and do not include as many personalized project learning methodologies or experts in the educational area, suffered due to Covid-19 as well. While some competitors still expanded during this time, many of these physical STEAM learning centers had to temporarily close and some left the market. The ones that survived all these changes have reduced their offerings and employees, and switched to online summer camps. For that reason, ZML planned its strategy around expanding its face-to-face summer camp offerings, anticipating possibly less competition and a larger market of parents that wanted to register their children despite the economic setbacks, and who were looking for more social interaction for their children. With new Covid-19 variants such as OMICRON, changing regulations from province to province, job losses, and inflation, it seems more likely that more families will be staying local in summer and many will still need childcare help, especially in cases where both parents work.

The objective of this project is to create a Project Management Plan to support Zen Maker Lab's expansion in summer in Metro Vancouver, Victoria, Edmonton, and Calgary following the standards of the Project Management Institute (PMI). The methodology used for the research was descriptive and analytical; additionally, this project was conducted in accordance with the requirements of PMI's sixth edition of the Project Management Body of Knowledge (PMBOK® Guide). With the Project Management Plan template drawn up and the experience gained in 2021, it is expected that the company will be able to pursue their presence in the cities mentioned above and others based on the market opportunities.

## 1. Introduction

### 1.1 Background

Zen Maker Lab (ZML) is a private local business that started operations in 2013 to provide education in STEAM (Science, Technology, Engineering, Art and Math) to kids, youth and adults in North Vancouver, British Columbia, Canada. All classes and courses at ZML are delivered by engineers, designers, and entrepreneurs with experience in the industry and interest in education. The founder and president of the organization, David (Cyri) Jones, is a business professor, and entrepreneur who has found that education and technology are essential to children and youth to guarantee social growth and development. With this idea in mind since 2013, Zen Maker Lab has taught STEAM programs to more than 10,000 children, youth, and adults in different capacities in approximately 100 schools in Vancouver's Lower Mainland. As well, it was one of the first maker spaces in North America focused on children's programs.

However, in the last three years, education has changed substantially in Canada due to the rapid growth of technology worldwide (Ricardo Hausmann and Jose Domínguez). To compete with the global demand, provincial governments across Canada decided to transform and adjust their curriculums. In British Columbia, the changes were made in the area of STEAM by launching the Applied Design Skills and Technologies curriculum (Government of British Columbia, n.d.) which was an enormous "game changer" in the dynamics of learning about STEAM. For example, private and public schools started building their own maker spaces and began to find their own champions in technology within the institutions to train their instructors. However, this process sped up abruptly due to Covid-19 when millions of students across Canada had to turn to online learning, which was an opportunity for Zen Maker Lab (ZML) to support teachers during this transition from face-to-face to online. Nevertheless, it was a

challenge for the company itself since most of the schools closed to outside programs, and ZML had to pursue other revenue streams on short notice.

Online after school programs were generally not well received by parents as their children had already experienced extensive screen time during the day as part of their regular studies. Parents tried to compensate for this by finding alternatives around sports, cooking, or drawing classes that were more hands-on and away from computer screens. Rapidly, ZML was impacted, but at the same time, the company tried to find innovative alternatives such as the production of face shields and project kits, launching a livestream show called DesignMakePlay, and delivering classes online in Fusion 360, 3D printing & 3D Design, Animation, Coding, Robotics, Illustration, and Film.

One extra element was the opening of a second physical location at The Shipyards; a popular new waterfront development in North Vancouver, and a project that could not be halted due to a lease having already been signed and it being an important part of the Company's long-term strategic plan for growth. However, its importance in the growth strategic plan demanded extra attention and budget.

ZML's competitors, whose educational offers are more "cookie-cutter," standard, and do not include as many personalized project base learning methodologies or experts in the educational area, suffered due to Covid-19 as well. While some competitors still expanded during this time, many of these physical STEAM learning centers had to temporarily close their businesses, reduce their offerings, and switch to online summer camps. For that reason, Zen Maker Lab planned its strategy around expanding its face-to-face summer camp offerings, anticipating possibly less competition and a larger market of parents that wanted to register their



children so they could have some more social interaction. With travel bans, new Covid-19 variants such as OMICRON, job losses, and inflation, it seems more families will be staying local in summer and many will still need childcare help, especially in many cases where both parents work.

## **1.2 Statement of the Problem**

ZML is now looking to expand to around Vancouver as well as Victoria in British Columbia, and Edmonton and Calgary in Alberta to have a leading Western Canadian presence. The cities selected have the following in common; they are the largest cities close to Vancouver with dense metropolitan populations with median total incomes per household around \$80,000. For example, Calgary and Edmonton populations are 1.5 and 1.4 million with incomes of \$83,500 and \$86, 500 respectively. In Victoria, the presence responds to political opportunities and its closeness to Vancouver. (Living in Canada, n.d.). In contrast, Kelowna's population has increased in the last year (Statistics Canada, 2021). "Kelowna is the province's third-largest metropolitan area (after Vancouver and Victoria), it's the seventh-largest city overall, and the largest in the interior" (Statistics Canada, 2016). The goal is to have a large enough base for sufficient economies of scale to cover the fixed costs of curriculum development and the core management team. Due to the size, time sensitive nature, and complexity of the project, it is of great importance to create a Project Management Plan to support the expansion plan of ZML to run summer camps in Vancouver, Victoria, Calgary and Edmonton. A plan based on the same operating principals can help Zen Maker Lab to pursue those markets in the future years and be ready to jump into similar opportunities in the future.

“Setting up in another part of town, a new region, or a new country can produce huge benefits for your business, including more customers, better economies of scale and improved inventory turnover.” (BDC, n.d.). This is the plan that ZML’s president has in mind to overcome the situation that Covid-19 imposes on all industries. Its description will help guide the project execution. The project plan will focus on providing enough information based on the experience acquired in 2021 and will emphasize on human resources since more than 20 new employees must be hired and onboarded in a month. The project plan will include information related to the minimum budget required, scope and schedule with the basic resources sufficient to execute the project by summer camps starting in Vancouver and outside.

### **1.3 Purpose**

In the summer, parents are looking for new opportunities for their children to get exposed to new activities encouraging them to develop new skills and build capacity in a wide range of areas such as sports, new technologies, and arts. For that reason, summer camp season has become one of the most important seasons of the year for families, and of course, for ZML who found, after a detailed analysis, the necessity for opening new locations. Consequently, ZML will need to hire and train new instructors in STEAM.

As ZML grows, it is important to stay on top of all the different moving pieces that come with running summer camps outside of Vancouver. The decision made by the sponsor was to take Kelowna out for this summer, reducing the number of hirings to 20, instead of 30. This new situation requires standardizing courses, putting hiring and training processes in place, and of course, having access to adequate locations.

#### **1.4 General Objective**

To create a Project Management Plan template to support Zen Maker Lab's presence in Metro Vancouver, Victoria, Edmonton, and Calgary in summer following the standards of the Project Management Institute (PMI).

#### **1.5 Specific Objectives**

The specific objectives are as follows.

- To generate a Project Integration Management Plan that helps to understand and articulate the project and can be used as a template for future year as a project plan template.
- To develop a Project Scope Management Plan to establish the project outlook, resources and schedule to complete the deliverables.
- To create a Project Schedule Management to identify activities and resources required for the project's competition.
- To design a Project Cost Management Plan to estimate the budget and cost of the Summer Camps outside of Vancouver
- To create a Project Quality Management Plan to guarantee that suitable people will be hired, and the selected locations have the appropriate characteristics to run the summer camps
- To elaborate a Project Communications Management Plan to keep information on hand to maintain transparent communications with the stakeholders and minimize risks during the project
- To describe the proper steps to develop a Project Risk Management Plan that can be used in the future

- To describe the steps to elaborate a Procurement Management Plan that will help the company in the future
- To create a solid Project Stakeholder Management Plan to facilitate project development to run the camps in Victoria, Edmonton, and Calgary.

## **2. Theoretical framework**

### **2.1 Company/Enterprise Framework**

#### **2.1.1 Company/Enterprise Background**

Zen Maker Lab has provided STEAM (Science, Technology, Engineering, Art, and Math) classes, workshops, and summer camps to schools across the Lower Mainland with engaging content since 2013. As well, ZML was one of the first children-focused maker spaces in North America, making the educational offer more innovative and complete. However, in the last three years, the education sector has been evolving and transforming rapidly; private schools have started to build their own maker spaces, and public ones have received funding from the government to transform their classrooms. Also, the provincial governments have led initiatives to change curriculums to better cover STEAM topics in schools. British Columbia was the first province to announce and implement a comprehensive STEAM focus through its Applied Design Skills and Technology Curriculum (Center on International Education and Benchmarking, 2020).

In STEAM education, private companies found the opportunity to fill up the gap between traditional education and future workplace demands. The conversation started, and industries and international organizations opened the discussion around the new set of skills for the XXI Century. (Charles Fadel, 2008). Zen Maker Lab and others began to offer parents a new alternative education for their kids that could supplement what children were learning in schools.

Franchises saw this sector as potentially highly profitable, and their expansion has been aggressive. Franchise companies such as Idealab Kids (<https://idealabkids.com/>) has opened more than 80 locations in nine years, and STEAMoji (<https://www.steamoji.com/>), more than nine locations in its first year.

However, ZML's offer is more specialized due to its personalized and project-based learning methodology that pursues the objective of developing in children and youth a new mindset to become the next generation of designers, makers, and healthy and active citizens. ZML's methodology is not only to master the "hard" technical skills, but also to foster the increasing demand for soft skills. ZML has more of an educational quality focus with a slower growth approach, which is less standardized and more pedagogically rich than a more profit maximizing and high growth franchise company model. This is ZML's main differentiation factor. Moreover, its instructors are all engineers or designers interested in teaching and experienced their industries rather than purely business franchise owners.

These characteristics make the service cycle slow and expensive for the company, but beneficial for parents, children and youth, and schools. The hope is that the slower, but higher quality growth approach will provide a more sustainable foundation in the longer run, as well as an ability to effectively compete against the franchise players. To compete and balance the situation in Covid-19 times, summer camps are the best option for ZML to look into new markets and test out its best possibilities of expansion. Moreover, this brings to engineers or designers interested in teaching and experienced their industries the opportunity to work in a place where their abilities and skills can be developed rather than a purely business franchise owners framed in a repetitive format.

## **2.1.2 Mission and Vision Statements**

### **2.1.2.1 Mission.**

To empower the next generation of designers, makers, and healthy and active citizens.  
(Zen Maker Lab Inc., 2019)

### **2.1.2.2 Vision.**

To provide a high quality, engaging STEAM learning experience for children and youth, so they may emerge as catalysts in their communities and be leaders in community contribution as well as become the next generation of business and technology leaders. (Zen Maker Lab Inc., 2019)

## **2.1.3 Organizational structure**

Zen Maker Lab is a local business in North Vancouver with three main functional areas: education programs and curriculum development, sales and marketing, and industry services. The core team of 10 employees are now assisting with the expansion and the onboarding of 20 summer engineering and design students, helping with the curriculum development and camp rollout.

In Figure 1 below, the organizational chart is depicted. David (Cyri) Jones, President and Founder; Gabriel Castanon, Vice President of Product Development & R&D; Tanner Brine, Director of Operations. Each lead has a new group of people and projects. It is necessary to hire 30 STEAM instructors, who will be coordinated by Operations, but will be trained by Ela Khorvash. The hiring will be managed by Cyri Jones and Tanner Brine.

**Figure 1**

*Zen Maker Lab Organizational Chart*

## Zen Maker Lab - Organization Chart



Note. This is the organization structure of the company. From: Zen Maker Lab <https://www.zenmakerlab.com/zen-team>. by the author

### 2.1.4 Products offered

Zen Maker Lab’s offerings are spring, summer, fall, and winter camps, a STEAM academy, in-school programs, after school programs, Robotics Academy, and the DesignMakePlay show.

- The DesignMakePlay Fabrication Academy or “Fab Academy” is the place where kids, youth, and adults learn about STEAM and STEM through their own projects. This program has flexible hours, but it is two-hours, twice a week.
- The In-School Program is an opportunity for schools to engage their students and teachers in grades 1-7 in different STEM/STEAM activities. This involves the ZML MakerLab2Go van and engineering staff visiting a school once a week for four weeks and having classes cycle through engaging STEAM activities.
- The After School Programs are delivered in schools and parents register their kids to participate in 90-minute sessions in STEAM/STEM after the regular school day for 6 or 8 weeks.
- The DesignMakePlay show is a workshop live-streamed where schools register and take 60-minute sessions in STEAM between 9 am and 2 pm. There are a maximum of four classrooms per session. The first session from 9 am to 10 am is a free session. The sessions later in the day are part of a paid subscription program.
- Robotics Academy is a joint effort between North Vancouver School District, Zen Maker Lab, and Carson Graham where youth from grades 10 to 12 enrol to learn about robotics.
- Spring, Summer, Fall, and Winter camps are seasonal camps for children between 7 and 12 years old and youth between 13 and 15 years old. They can



join a large range of STEAM/STEM classes, which are now in many new locations that parents can select from. The offering is weekly Monday to Friday from 9:00 am to 3:30 pm.

### ***2.1.5 Other applicable theory/ concepts and context***

#### **2.1.5.1 Origins of Summer Camps and STEAM - Concepts.**

The Cambridge dictionary defines Summer Camps as “In the U.S., a place where children can go, usually to stay, and do activities.” (Dictionary, 2022) The traditional view of a summer camp was a woody place with hiking, canoeing, and campfires. Now, this view has changed to offer a wide variety of specialized activities such as STEAM. (Wikipedia, 2022)

STEM is an acronym that was introduced in 2001 by The U.S. National Science Foundation (NSF) thinking of a strategy to foster interests in science, technology, engineering, and mathematics among kids and youth in schools. This was due to the shortcomings found in the TIMSS (Trends in International Mathematics and Science Study) and PISA (Program for International Student Assessment) studies when United States ranked 21<sup>st</sup> among 30 countries. After those results, the United States resolved to address the situation, and the Claude Worthington Benedum Foundation explored alternatives to align educational needs with the education system. “The study, which was administered jointly by Carnegie Mellon University (CMU) and the Intermediate Unit 1 (IU1) Center for STEM Education, noted that U.S. educators were unsure of the implications of STEM, particularly when scientific and technological literacy of all students was the goal. Educators lacked in-depth knowledge of STEM careers, and, as a consequence, they were not prepared to guide students to those fields.” (Hallinen, 2020).

### **2.1.5.2 Origins of STEAM in Canada.**

In Canada, STEM/STEAM is a young movement, and it was introduced in 2011 mainly by non-profit organizations and school initiatives. The whole idea of STEAM, Science, Technology, Engineering, Art, and Math is “to provide students with an authentic learning experience. According to Reeves et al. (2004), students should have authentic tasks that have a real-world context, ill-defined problems, complex or multistep questions, multiple ways to approach a problem, integrate across the disciplines, and have failure and iterations built into the assignment itself (Armory, 2014).” (Bertrand, 2019).

In Ontario, Canada, STEAM camps were demonstrated to be successful and engaging ways of learning through hands on and experiential learning paths. “There are also a number of older students, either in secondary school or in college/university, with the skills and interest to act as mentors in the use of STEM (robotics) in the classroom for both young students and teachers. Recognizing the value of robotics as an instructional resource, in the summer of 2018 the Ministry of Education again offered funds through an agreement with the Access to Post-Secondary Strategy. With CODE’s coordination, additional funding was distributed to boards to further promote efforts related to ensuring equitable access to post-secondary education starting in the early years and supporting summer learning students and their parents.” (Education, 2018)

### **2.1.5.3 Zen Maker Lab and STEAM Summer Camps – Why is ZML teaching STEAM content?.**

Zen Maker Lab started to deliver courses in STEAM in 2013, and has been providing and building curriculum in the area ever since. In the summer, ZML is planning to have

presence in three different regions in Canada using the project learning based methodology that complements the BC Curriculum in the Applied Design Skills and Technologies. (Government of British Columbia, n.d.) Also, ZML has gradually been implementing the International Education Baccalaureate skills into all programs (intellectual, emotional, personal, & social skills) to contribute to building a better human being and subsequently a better society. (International Baccalaureate, 2005)

Summer camps or camps in general are important because they provide opportunities for youth to develop soft skills such as social interaction, leadership, communication, critical thinking, and respect, among others. They also build on hard skills directly related to the camp subject which contributes to developing the personality of the camper. The American Camp Association highlights the importance of these camps: “Camp provides children with a community of caring adults who nurture experiential education that results in self-respect and appreciation for human value. All the outcomes — self-identity, self-worth, self-esteem, leadership, and self-respect — build personal competencies.” (American Camp Association, 2022)

Another organization that has researched the importance of after school programs for children and youth is Youth.Gov. They describe the participation in extra curricular activities for kids and youth as critical for their “overall development” and suggest 10 million campers enroll in the summer camps each year<sup>1</sup>.

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<sup>1</sup>“The activities children and youth engage in outside of school hours are critical to their overall development, highlighting the need for quality afterschool programs in all communities. The demand for afterschool programs is strong, with nearly 10.2 million children and youth who participate in afterschool programs annually,<sup>1</sup> across 10 million in summer camps and 6 million in 4-H programs, alone.<sup>2</sup>” Youth.gov [https://youth.gov/youth-topics/afterschool-programs#\\_ftn2](https://youth.gov/youth-topics/afterschool-programs#_ftn2)

Also, the Wallace Foundation in their white paper “Effective and promising summer learning programs and approaches for economically-disadvantaged children and youth,” written on July 10, 2009 and revised in January 2010, mentioned an interesting study where 3,395 families who participated in one of the 90 day summer camps for a minimum of a week showed improvement in their “positive identity, social skills, physical and thinking skills, and positive values and spirituality.” (Terzian, 2009)

The two documents above explain in detail the benefits that summer camps and other after school programs bring to children’s and youth’s development in their futures, and Zen Maker Lab knows it. Consequently, ZML’s learning approach relies on hands on projects with assistance from qualified engineers, designers, artists, or business staff to boost children and youth creativity and innovative capability without requiring them to have previous knowledge in STEAM. The whole approach is to open the possibilities for campers to explore, learn, and have fun at the same time.

Additionally, all programs offered by ZML coincide with the best practices suggested by the Wallace Foundation such as Make Learning Fun, Ground Learning in a real-world, Hands-on activities, Content curriculum standards, Experienced Staff, and Small Size Groups. (Terzian, 2009) All content of courses, classes, and programs can be viewed at the Zen Maker Lab website.

#### **2.1.5.4 ZML moves from face-to-face classes to online – Explanation.**

Zen Maker Lab adapted its classes and courses to be delivered face-to-face or online due to Covid-19. Each modality encounters its own benefits and challenges, but safety becomes a priority for the company at the moment of delivering their programs which diligently follow the latest government guidelines without sacrificing content, interactivity, or quality material. As Globe and Mail, a Canadian newspaper, explained in its article, “For some children, online learning had unexpected benefits” published on February 19<sup>th</sup> of this year, some children felt relieved by having classes online due to constant racism or bullying attacks suffered in their classrooms (Aphonso, 2022). The flip side of the coin is the harm that isolation and excessive screen time causes in children and youth. This is well explained in a particular case in Manitoba where the Manitoba Pediatric Society and Canadian Pediatric Society sent a joint letter to Manitoba’s premier and education minister saying:

"Online learning is harmful. Social isolation and prolonged in-person school closures have precipitated increases in unhealthy behaviors — such as excessive screen time, reduced physical activity, and substance use."<sup>2</sup> This was registered by CBC News in the article “Online learning is harmful: Pediatric societies want Manitoba students back in classrooms Social Sharing.” (Bernhardt, 2022)

Having this wide spectrum and variables up front, ZML is looking to tailor all programs around the Sustainable Development Goals 1. No Poverty, 4. Quality Education, 5. Gender Equality, 8. Decent Work and Economic Growth, 10. Reduce Inequalities, and 17 Partnerships for the Goals (United Nations, 2020) to consolidate its social responsibility commitment through

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<sup>2</sup> See full article Bernhardt, Darren “Online learning is harmful: Pediatric societies want Manitoba students back in classrooms Social Sharing” CBC News, January 7, 2022

its Access2Innovate Foundation, the mission of which is “helping provide access to STEAM education for kids, youth and adults facing barriers.”

## **2.2 Project Management concepts**

### **2.2.1 Project**

Based on the definition of the PMBook Guide, “A project is a temporary endeavor undertaken to create a unique product, service or result.” (Project Management Institute, p.4. 2017)

### **2.2.2 Project management**

Project management is important because, as Geoff Reiss said, “Project management is like juggling three balls – time, cost and quality. Program management is like a troupe of circus performers standing in a circle, each juggling three balls and swapping balls from time to time.” Any project has to deal with the same variables, time, cost, and quality, and as the Project Management Institute says, “project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements.” (Project Management Institute, p.10. 2017).

To maintain the project on track, the PMBOK will be used as main source of reference to manage this project. The development of the Final Graduation Project (FGP) will consist of creating a Project Management Plan for Zen Maker Lab.

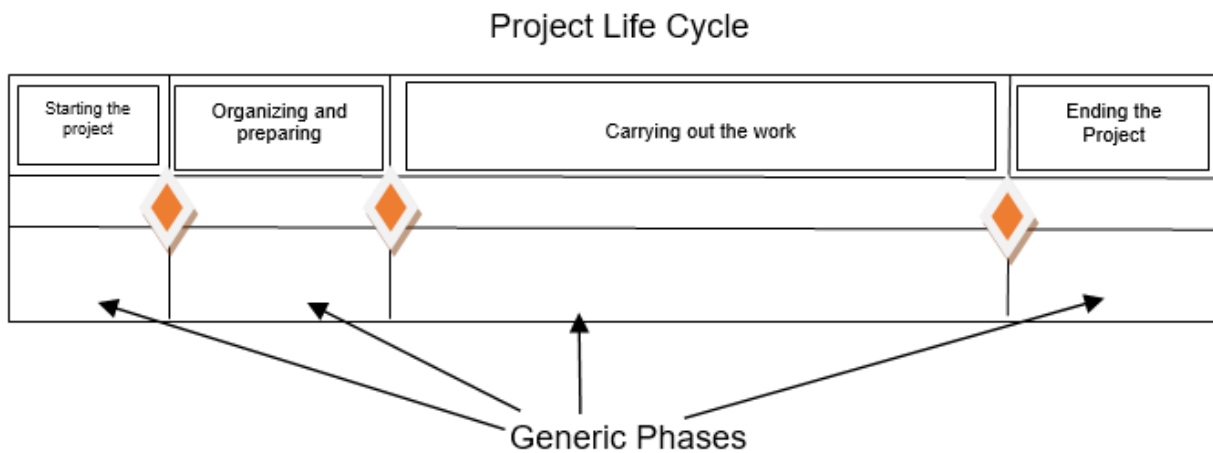
### **2.2.3 Project life cycle**

Project Life Cycle is the sequence of steps that can overlap or not. PMBOK defines it as “the series of phases that a project passes through from its initiation to its closure and its four

general steps are Starting, Organizing and preparing, Carrying out the work and Closing”  
(Project Management Institute, 2017.pp.18-19)

**Figure 2**

*Generic Depiction of a Project Life Cycle*



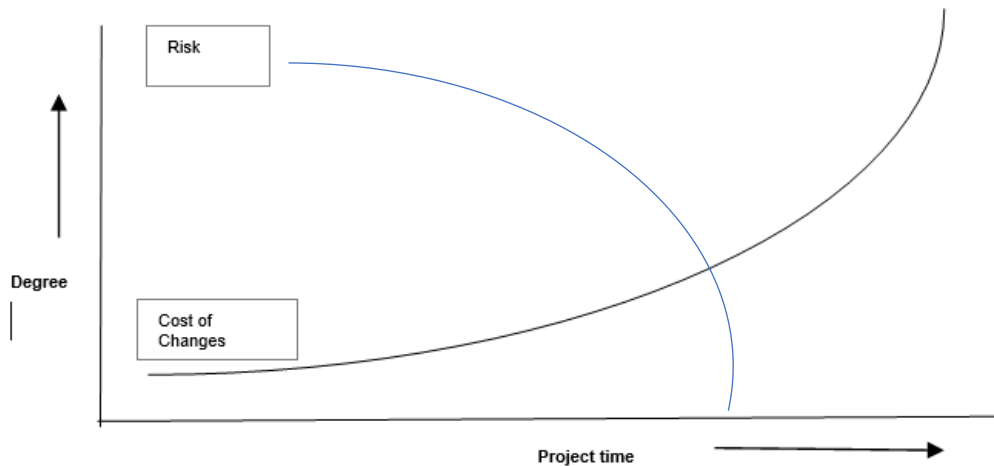
Note. From *A Guide to The Project Management Body of Knowledge PMBOK Guide in Pennsylvania*. (6th ed., p.549), by Project Management Institute, 2017. Copyright 2017 by Project Management Institute.

A generic life cycle structure displays:

1. Cost and staffing levels
2. Risks that decrease over the life cycle of the project as decisions are taken, and deliverables accepted
3. The ability of stakeholders to influence the final characteristics of the project without significantly affecting costs and schedule. The costs of making changes and correcting errors increases typically as the project approaches completion. (Project Management Institute, 2017)

**Figure 3**

*Impact of Variables over time*



Note. From *A Guide to The Project Management Body of Knowledge PMBok Guide in Pennsylvania*. (6th ed., p.427), by Project Management Institute, 2017. Copyright 2017 by Project Management Institute

Zen Maker Lab' project will be similar to Figures 2 and 3 due to the short time of planning and execution of the project.

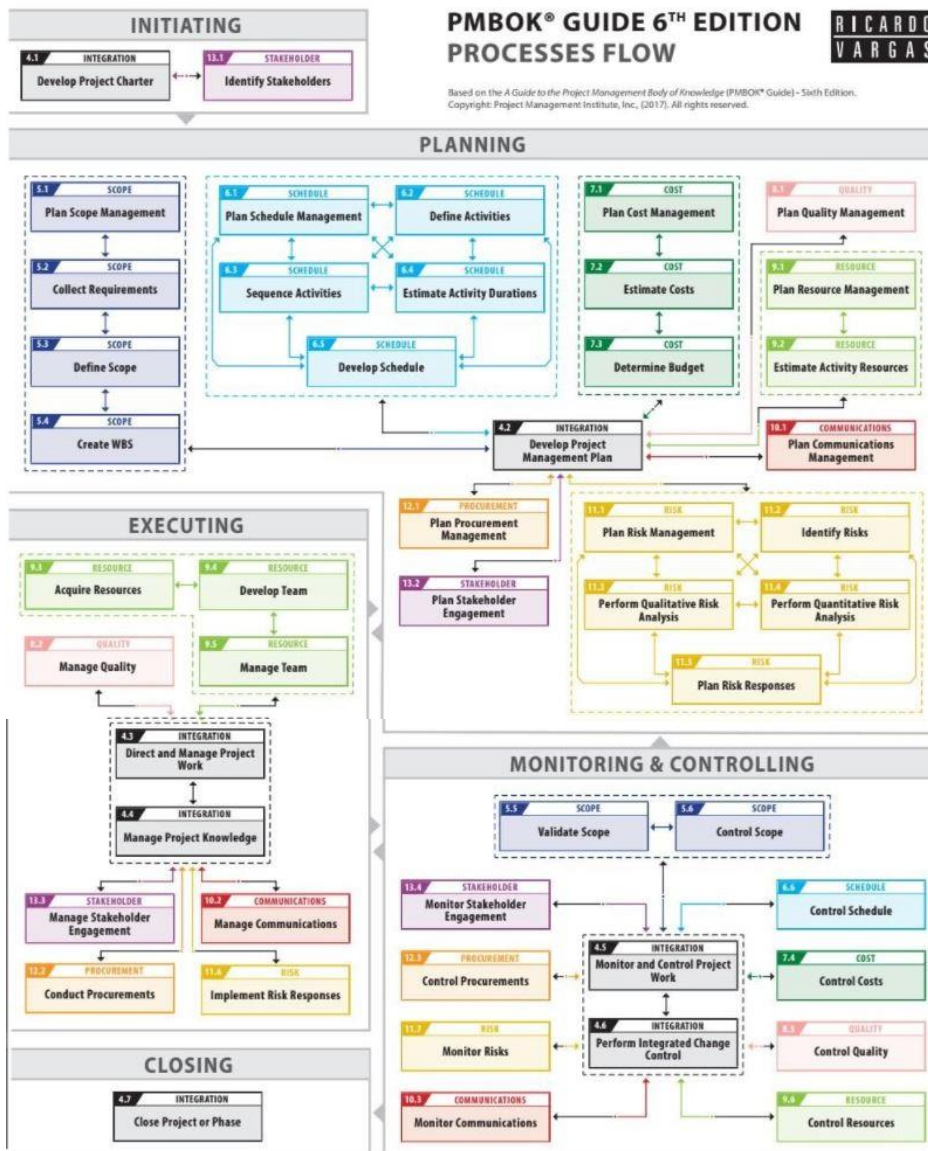
#### **2.2.4 Project management processes**

Below is the initiation process flow sixth edition that will be follow by Zen Maker Lab's project.

#### **Figure 4**

*Process Flow*





Note. Source by Designed by Ricardo Vargas <https://ricardo-vargas.com/pmbok6-processes-flow/>

All knowledge areas will be considered, except controlling and procurement due to the most sensitive aspects of the project described in the requirements being the searching of locations and the selection, recruitment, hiring and training of the new instructors. However, to comply with the university requirements, the steps will be explained to have them in proper plans for this process based on PMI.

Figure 5

49 Process by Knowledge Area and Group

The 49 Processes by Knowledge Area and Group					
PMBOK® GUIDE	Initiating Process Group (02)	Planning Process Group (24)	Executing Process Group (10)	Monitoring & Controlling Group (12)	Closing Process Group (01)
6 <sup>th</sup> Edition	Develop Project Charter	Develop Project Management Plan	Direct & Manage Project Work <i>Manage Project Knowledge</i>	Monitor & Control Project Work Perform Integrated Change Control	Close Project or Phase
Project Integration Management					
Project Scope Management		Plan Scope Management Collect Requirements Define Scope Create WBS		Validate Scope Control Scope	
Project Schedule Management		Plan Schedule MGT Define Activities Sequence Activity Estimate Activity Duration Develop Schedule		Control Schedule	
Project Cost Management		Plan Cost Management Estimate Costs Determine Budget		Control Cost	
Project Quality Management		Plan Quality MGT	<i>Manage Quality</i>	Control Quality	
Project Resource Management		Plan Resource MGT <i>Estimate Activity Resources</i>	Acquire <i>Resources</i> Develop Team Manage Team	<i>Control Resources</i>	
Project Communication		Plan communication MGT	Manage Communication	<i>Monitor Communication</i>	
Project Risk Management		Plan Risk MGT Identify Risk Perform Qualitative Risk Analysis Perform Quantitative Risk Analysis Plan Risk Response	<i>Implement Risk Response</i>	<i>Monitor Risk</i>	
Project Procurement		Plan Procurement MGT	Conduct Procurement	Control Procurement	
Project Stakeholder MGT	Identify Stakeholders	<i>Plan Stk Engagement</i>	Manage Engagement	<i>Monitor Engagement</i>	

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Note. Source by Designed by Abdulla PMI-ACP, CSM, PMP [www.abdullapmp.com]

### 2.2.5 Project management knowledge areas

ZML project will focus on the development of the Zen Maker Lab Summer Camps. The theory about the knowledge area has been summarized in Figures 5 and 6. The most sensitive aspects of the project based on the requirements are finding new locations in Victoria, Calgary, Edmonton, and the Metro Vancouver area, and the selection, hiring, and training of the new instructors. For that reason, the project will focus on those requirements to satisfy the

requirements of the sponsor to run the summer camps in 2021 while also generating the templates to have presence of summer camps outside of Vancouver in the future. Below is a general description of each knowledge area.

#### **2.2.5.1 Project Integration Management.**

All processes and activities that combine allow coordination of the processes and the project management activities within the Project Management Groups. (Project Management Institute, pp. 69-128. 2017)

#### **2.2.5.2 Project Scope Management.**

Includes all processes to ensure that the project is completed. (Project Management Institute, pp. 129-171. 2017)

#### **2.2.5.3 Project Schedule Management.**

Includes all processes to finish the project on time. (Project Management Institute, pp. 173-230. 2017)

#### **2.2.5.4 Project Cost Management.**

Involves planning, estimating, budgeting, financing, funding, managing, and controlling. In this way, the project will be on budget. (Project Management Institute, pp. 231-270. 2017)

#### **2.2.5.5 Project Quality Management.**

Incorporates all policies regarding planning, managing, controlling, and project product quality requirements in order to manage stakeholders expectations. (Project Management Institute, pp. 271-306. 2017)

#### **2.2.5.6 Project Resource Management.**

Includes all resources necessary to complete the project successfully. (Project Management Institute, pp. 307-358. 2017)

#### **2.2.5.7 Project Communications Management.**

Includes the collection of all information. (Project Management Institute, pp. 359-393. 2017)

#### **2.2.5.8 Project Risk Management.**

Project Risk Management includes identifying risks, responding to them, implementing changes, and then monitoring them for success. (Project Management Institute, pp. 395-457. 2017)

#### **2.2.5.9 Project Procurement Management.**

Includes the processes of purchasing to acquire products or services needed from outside of the project team. (Project Management Institute, pp. 459-501. 2017)

#### **2.2.5.10 Project Stakeholder Management.**

Identifies the groups or organizations that could impact or be impacted by the project. Also, permits analysis of stakeholder expectations and their impact on the project to develop

appropriate strategies for effectively engaging stakeholders in the project decisions and executions. (Project Management Institute, pp. 503-536. 2017)

### **3. Methodological framework**

#### **3.1 Information sources - Concept**

It is important to understand the meaning of a source of information. In this way and for purposes of the Final Graduation Project (FGP), it will help to categorize and organize the data in the project. Based on the definition provided by The Library and Information Science Academy Blog, "An Information Source is a source of information for somebody, i.e., anything that might inform a person about something or provide knowledge to somebody. Information sources may be observations, people's speeches, documents, pictures, organizations, etc." (LISBDNETWORK, 2018)

Different theories of knowledge or epistemology theories see the importance of classifying the source of information to validate and establish the scope of an investigation. This classification will help to differentiate a justified opinion over a simple opinion. In epistemology, there are two types of sources divided into two main categories, Non-Documentary Sources and Documentary Sources. The first one refers to formal sources and informal sources such as industry, government, universities, consultants, and meetings. The second one, alludes to recorded or published documents which are organized into three groups Primary, Secondary and Tertiary. (LISBDNETWORK, 2018) For the purpose of this project most of the sources will be Non-Documentary and Primary Documentary Sources such as websites and companies. (LISBDNETWORK, 2018)

### 3.1.1 Primary sources

Primary information for this Final Graduation Project (FGP) will be consulted books, websites, STEAM documents, and non-Documentary sources such as industry, government, and conversations with colleagues and other representatives.

The definition of Primary Sources is “the first published records of original research and development or description of new application or new interpretation of an old theme or idea. These are original documents representing unfiltered original ideas.” (LISBDNETWORK, 2018).

### 3.1.2 Secondary sources

“Primary sources are distinguished from secondary sources, which cite, comment on, or build upon primary sources. Though the distinction is not a sharp one, “Primary and secondary are relative terms, with sources judged primary or secondary according to specific historical contexts and what is being studied.” (Kragh 1989) Secondary sources “are those which are either compiled from or refer to primary sources of information.” (LISBDNETWORK, 2018) Refer to the Table 1 to review the list of sources that apply to this FGP.

**Table 1**

*Information sources – List of sources*

Objectives	Information sources	
	Primary	Secondary

<p>1.To generate a Project Integration Management Plan that helps to understand and articulate the project.</p>	<p>Meeting with the President of the company.</p>	<p>PMBOK Guide and websites.</p>
<p>2. To develop a Project Scope Management Plan to generate the deliverable expected to fulfill the project requirements regarding people needed to run the camps and places.</p>	<p>Meeting with the President of the company.</p>	<p>PMBOK Guide and websites.</p>
<p>3. To create a Project Schedule Management Plan to identify the activities and resources required to find the instructors and locations on time, which is the main objective of the project</p>	<p>Meeting with the President of the company and other colleagues.</p>	<p>PMBOK Guide and websites</p>
<p>4. To design a Project Cost Management Plan to estimate the budget and cost of the Summer Camps outside of Vancouver where the main costs are instructor and locations.</p>	<p>Meeting with project leads and accounting</p>	<p>PMBOK Guide and websites</p>
<p>5. To create a Project</p>	<p>Meeting with President of the</p>	<p>PMBOK Guide and websites</p>

<p>Quality Management Plan in order to guarantee that suitable instructors will be hired and the selection of locations is appropriated to run the summer camps.</p>	<p>company and operation manager</p>	
<p>6. To create a Project Resource Management Plan focused on human resources, the main resource on this project.</p>	<p>Meeting with President</p>	<p>PMBOK Guide, and websites</p>
<p>7. To elaborate a Project Communications Management Plan to keep the information on hand to maintain transparent communication - with the stakeholders to minimize risks during the project.</p>	<p>Meeting with President</p>	<p>PMBOK Guide and websites</p>
<p>8. To describe the proper steps to develop a Project Risk Management Plan that can be used in the future.</p>	<p>Meeting with President, advisors and other partners</p>	<p>PMBOK Guide and websites</p>
<p>9. To describe the steps to elaborate a Procurement Management Plan that will help the company in the future.</p>	<p>Meeting with Operations Manager</p>	<p>PMBOK Guide and websites</p>



<p>10. To create a solid Project Stakeholder Management Plan that identifies the different audiences that could positively and negatively impact the project, which facilitates the project development in running the camps outside of Vancouver.</p>	<p>Meeting with the President</p>	<p>PMBOK Guide and websites</p>
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Note. Source by adapted from LISBDNETWORK, 2018 <https://www.lisedunetwork.com/tag/library-resources/>

### 3.2 Research methods

It is important to differentiate between Research Methods and Research Methodologies. The definitions of Research method are “all those methods, which a researcher employs to undertake research process to solve the given problem. The techniques and procedures that are applied during a studying research problem are known as the research method. It encompasses both qualitative and quantitative methods of performing research operations, such as survey, case study, interview, questionnaire, observation, etc.” (LISBDNETWORK, 2018).

Research methods are in three categories:

- Data collection: It is used when the existing data is not sufficient, to reach the solution.
- Analyzing data: Identify patterns and establish a relationship between data and unknowns.

- Mixed data: Comprised of the methods which are used to check the accuracy of the results obtained. (S, 2018).

The Research Methodology definition is “the study of methods to solve the research problem. It is the science of learning the way research should be performed systematically. It refers to the rigorous analysis of the methods applied in the stream of research, to ensure that the conclusions drawn are valid, reliable, and credible too.” (LISBDNETWORK, 2018).

In the methodology, it is important to understand the variance between descriptive and analytical research. “Descriptive research is a survey and fact-finding investigation. It aims to describe the characteristics of individuals, situations, or groups or the state of affairs as it exists at present. Researchers have no control over the variables and researchers have to report the actual conditions. On the other hand, analytical research is a critical evaluation based on information that is available and primarily concerned with testing hypothesis; specifying and interpreting relationships by analyzing the facts or existing information.” (UK Essays, 2018).

In an easy way to understand, the descriptive research looks for “what?” while analytical research answers “why?” It is the cause and effect of the situation.

**Table 2**  
*Research methods*

Objectives	Research methods	
	Descriptive	Analytic
1..To generate a Project Integration Management Plan that helps to understand and	It is important to understand how to articulate the project	It is important to understand why and how the project will evolve based on resource

<p>articulate the project.</p>		<p>allocation, management of activities, and stakeholders' information to achieve the competition of the project.</p>
<p>2.To develop a Project Scope Management Plan to generate the deliverable expected to fulfill the project requirements regarding people needed to run the camps and places.</p>		<p>Why the scope and deliverables are needed to fulfill the project and its requirements.</p>
<p>3.To create a Project Schedule Management Plan to identify the activities and resources required to find the instructors and locations on time, which is the main objective of the project.</p>		<p>How and why the schedule is organized to identify activities and the distribution of resources in a timely manner to overcome possible risks.</p>
<p>4. To design a Project Cost Management Plan to estimate the budget and cost of the Summer Camps outside of Vancouver where the main costs are instructors and locations.</p>		<p>How to design the costs to keep the budget on track in each stage of the project especially when it comes to renting locations.</p>
<p>5. To create a Project Quality Management Plan in order to guarantee that suitable instructors will be hired and the selection of locations is appropriate to run</p>	<p>What and how to create a proper HR plan to hire the correct staff and list the characteristics of the minimum requirements of the classrooms.</p>	<p>Why and how the job descriptions will impact positively or negatively in the delivery of the camps and the requirements of classrooms will</p>

the summer camps.		bring a good experience to participants.
6. To create a Project Resource Management Plan focused on human resources, the main resource on this project.		How and why design a Project Resource Management Plan focused on HR.
7. To elaborate a Project Communications Management Plan to keep the information on hand to maintain transparent communication with the stakeholders to minimize risks during the project.	The plan in communications requires a detailed description of the level of engagement of each stakeholder.	Why and how the stakeholders will engage in the project needs to be outlined in the project communications to minimize any negative impact.
8. To describe the proper steps to develop a Project Risk Management Plan that can be used in the future.		How and why steps have to be considered to build a Project Risk Management Plan to be applied in the future.
9. To describe the steps to elaborate a Procurement Management Plan that will help the company in the future.		How and why having good procurement practices are important.
10. To create a solid Project Stakeholder Management Plan that identifies the different audiences that could positively and negatively impact the project, which facilitates the		Why a good quality management plan is important for the company and how that can be used in the future.

project development in running the camps outside of Vancouver.		
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Note. *By the author based on (UK Essays, 2018).*

### 3.3 Tools

PMBOK defines Tools as “something tangible, such as a template or software program, used in performing an activity to produce a product or result” (Project Management Institute, pp.725. 2017).

**Table 3**

*Tools*

Objectives	Tools
1. To generate a Project Integration Management Plan that helps to understand and articulate the project.	1. Expert 's opinion 2. Interviews 3. Lists 4. Meetings
2. To develop a Project Scope Management Plan to generate the deliverable expected to fulfill the project requirements regarding people needed to run the camps and places.	1. Expert 's opinion 2. Alternative analysis 3. Meetings

<p>3. To create a Project Schedule Management Plan to identify the activities and resources required to find the instructors and locations on time, which is the main objective of the project.</p>	<ol style="list-style-type: none"> <li>1. Expert 's opinion</li> <li>2. Alternative analysis</li> <li>3. Meetings</li> </ol>
<p>4. To design a Project Cost Management Plan to estimate the budget and cost of the Summer Camps outside of Vancouver where the main costs are instructors and locations.</p>	<ol style="list-style-type: none"> <li>1. Expert 's opinion</li> <li>2. Alternative analysis</li> <li>3. Meetings</li> </ol>
<p>5. To create a Project Quality Management Plan in order to guarantee that suitable instructors will be hired and the selection of locations have the appropriate characteristics to run the summer camps.</p>	<ol style="list-style-type: none"> <li>1. Expert 's opinion</li> <li>2. Data gathering (Benchmarking, brainstorming, interviews)</li> <li>3. Data analysis (Cost benefit analysis, cost of quality)</li> <li>4. Decision making</li> <li>5. Data representation (Flowcharts, logical data model, matrix diagram, mind mapping)</li> <li>6. Test and inspection planning</li> <li>7. Meetings</li> </ol>
<p>6. To create a Project Resource Mangement Plan focused on human resources, the main resource on this project.</p>	<ol style="list-style-type: none"> <li>1. Expert 's opinion</li> <li>2. Data representation (Hierarchical charts, responsibility assignment matrix, text-oriented format)</li> <li>3. Organizational theory</li> <li>4. Meetings</li> </ol>
<p>7. To elaborate a Project Communications Management Plan to keep</p>	<ol style="list-style-type: none"> <li>1. Expert judgment</li> <li>2. Communications requirements analysis</li> </ol>

<p>the information on hand to maintain transparent communication with the stakeholders to minimize risks during the project.</p>	<ol style="list-style-type: none"> <li>3. Communication technology</li> <li>4. Communication models</li> <li>5. Communication methods</li> <li>6. Interpersonal and teams skills (communication styles assessment, political and cultural awareness)</li> <li>7. Data representation (Stakeholder engagement assessment matrix)</li> <li>8. Meetings</li> </ol>
<p>8. To describe the proper steps to develop a Project Risk Management Plan that can be used in the future.</p>	<ol style="list-style-type: none"> <li>1. Expert judgment</li> <li>2. Data analysis (stakeholder analysis)</li> <li>3. Meetings</li> </ol>
<p>9. To describe the steps to elaborate a Procurement Management Plan that will help the company in the future.</p>	<ol style="list-style-type: none"> <li>1. Expert judgment</li> <li>2. Data analysis</li> <li>3. Source selection analysis</li> <li>4. Meetings</li> </ol>
<p>10. To create a solid Project Stakeholder Management Plan that identifies the different audiences that could positively and negatively impact the project, which facilitates the project development in running the camps outside of Vancouver.</p>	<ol style="list-style-type: none"> <li>1. Expert judgment</li> <li>2. Data gathering (questionnaires, surveys and brainstorming)</li> <li>3. Data analysis</li> <li>4. Data representation (Stakeholder mapping representation)</li> <li>5. Meetings</li> </ol>

Note. By the author based on A Guide to the Project Management Body of Knowledge PMBOK Guide Sixth Edition 2017. Not all tools mentioned are going to be applied on this project.

### 3.4 Assumptions and constraints

The Project Management Institute defines an assumption as “a factor in the planning process considered to be true, real, or uncertain, without proof or demonstration” (Project Management Institute, 2017) and defines constraints as “a limiting factor that affects the execution of a project, program, portfolio, or process” (Project Management Institute, 2017). The list of assumptions and constraints related to this project are listed in the table below.

**Table 4**

*Assumptions and constraints*

Objectives	Assumptions	Constraints
1. To generate a Project Integration Management Plan that helps to understand and articulate the project.	The requirements are clear and do not change.	The client constantly changes the requirements.
2. To develop a Project Scope Management Plan to generate the deliverable expected to fulfill the project requirements regarding people needed to run the camps and places.	The scope will be narrow and approved easily.	Changing the scope because legal requirements change in locations to be rented due to COVID.
3. To create a Project Schedule Management Plan to identify the activities and resources required to find the instructors and locations on time, which is the main objective of the project.	The lack of knowledge regarding the number of students who will register in the camps makes it difficult to know how many places to rent or the number of instructors to hire	Not having the number of students registered ahead of time.  Lacking time for hiring and training



	<p>due to COVID.</p>	<p>instructors.</p> <p>Having more places rented than students in classrooms.</p>
<p>4.To design a Project Cost Management Plan to estimate the budget and cost of the Summer Camps outside of Vancouver where the main costs are instructors and locations.</p>	<p>Having all registration numbers by the deadline will help us to decide how many places to rent and the number of instructors to hire.</p> <p>Forecast of sales is not accurate.</p> <p>Hire over/ below number of people required.</p> <p>Renting more spaces than are needed.</p>	<p>Expensive policies for renting spaces.</p> <p>Unexpected parents' cancelations of their children's summer camps.</p>
<p>5. To create a Project Quality Management Plan in order to guarantee that suitable instructors will be hired and the selection of locations have the appropriate characteristics to run the summer</p>	<p>All hiring and training is executed on time and aligned with the company's requirements.</p> <p>Having problems finding good instructors (soft and hard skills).</p>	<p>No having enough time to train instructors</p>

<p>camps.</p>	<p>Having too many or too few locations.</p>	<p>properly.</p>
<p>6. To create a Project Resource Management Plan focused on human resources, the main resource on this project.</p>	<p>All hiring and training was completed on schedule. Rental places were found at good prices, and no more cities will be added or cancelled.</p> <p>The prices of rentals increase.</p>	<p>Hiring and training are out of schedule.</p> <p>Cities were cancelled or added in the project.</p>
<p>7. To elaborate a Project Communications Management Plan to keep the information on hand to maintain transparent communication with the stakeholders to minimize risks during the project</p>	<p>Communication is vague or unclear, especially for the instructors or rental places outside of Vancouver.</p> <p>If Covid continues to grow and locations have to close, or classes have to be delivered online, parents may not agree</p>	<p>New requirements and cancellations are added last moment, which increases the</p>

	<p>with it or the company's refund policies.</p> <p>Communication is smooth and clear. All stakeholders are engaged and understand their roles in the project.</p>	<p>risk of the project.</p>
<p>8. To describe the proper steps to develop a Project Risk Management Plan that can be used in the future.</p>	<p>All scenarios are clear and ZML is prepared.</p>	<p>Massive cancellations from parents.</p> <p>Locations close or increase prices for the rentals.</p> <p>Instructors are not hired and trained on time.</p> <p>There are not enough students registered.</p>
<p>9. To describe the steps to elaborate a Procurement Management Plan</p>	<p>All project kits and curriculum</p>	<p>Curriculum is not ready.</p>

<p>that will help the company in the future.</p>	<p>are ready to be delivered.</p>	<p>Project kits are not ready.</p>
<p>10. To create a solid Project Stakeholder Management Plan that identifies the different audiences that could positively and negatively impact the project, which facilitates the project development in running the camps outside of Vancouver.</p>	<p>All stakeholders will be contacted on time.</p>	<p>New cities are added.  Misleading stakeholders such as universities or rental places can undermine the possibility of running camps and impact future business relationships.</p>

Note. By the author based on *A Guide to the Project Management Body of Knowledge PMBOK Guide Sixth Edition, 2017.*

### 3.5 Deliverables

Deliverables are defined as “any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project.”

(Source: Project Management Institute, 2017)

**Table 5**  
*Deliverables*

Objectives	Deliverables
<p>1. To generate a Project Integration Management Plan that helps to understand and articulate the project in 2021 as a prototype and facilitates its implementation in future years.</p>	<ul style="list-style-type: none"> <li>• Project Scope Management (WBS – Project charter)</li> <li>• Project Schedule Management (Schedule)</li> <li>• Project Cost Management (Budget)</li> <li>• Project Stakeholder Management (Plan Stakeholder Management)</li> <li>• Project Quality Management (Plan Quality Management)</li> <li>• Project Resource Management (Estimate Activity Resources)</li> <li>• Project Communications (Plan Communications Management)</li> <li>• Project Procurement Management (Plan Procurement Management)</li> <li>• Project Risk Management (Plan Risk Management, Identify Risks, Qualitative Risk Analysis, Plan Risk Response).</li> </ul>
<p>2. To develop a Project Scope Management Plan to generate the deliverable expected to fulfill the project requirements regarding people needed to run the camps and places in 2021 and plant the seed to run summer camps in future years.</p>	<ul style="list-style-type: none"> <li>• Scope Management Plan</li> </ul>
<p>3. To create a Project Schedule Management Plan to identify the activities and resources required to</p>	<ul style="list-style-type: none"> <li>• Plan Schedule Management</li> </ul>

<p>find the instructors and locations on time, which is the main objective of the project in 2021 and can be reproduced to run summer camps in future years.</p>	
<p>4. To design a Project Cost Management Plan to estimate the budget and cost of the Summer Camps outside of Vancouver where the main costs are instructors and locations in 2021.</p>	<ul style="list-style-type: none"> <li>• Cost Management Plan</li> <li>• Budget</li> </ul>
<p>5. To create a Project Quality Management Plan in order to guarantee that suitable people will be hired and the locations selected have the appropriate characteristics to run the summer camps in 2021.</p>	<ul style="list-style-type: none"> <li>• Plan Quality Management</li> </ul>
<p>6. To create a Project Resource Management Plan focused on human resources, the main resource on this project.</p>	<ul style="list-style-type: none"> <li>• Plan Resource Management</li> <li>• Requirements documentation related to HR profiles and other requirements of the client.</li> </ul>
<p>7. To elaborate a Project Communications Management Plan to keep the information on hand to maintain transparent communication with the stakeholders to minimize risks during the project in 2021.</p>	<ul style="list-style-type: none"> <li>• Communications Management Plan</li> <li>• Stakeholder register</li> <li>• Other documents</li> </ul>
<p>8. To describe the proper steps to develop a Project Risk Management Plan that can be used in the future.</p>	<ul style="list-style-type: none"> <li>• Risk Management Plan</li> <li>• Risk Register</li> </ul>
<p>9. To describe the steps to elaborate a Procurement Management Plan that will help the</p>	<ul style="list-style-type: none"> <li>• Procurement Management Plan</li> <li>• Source of selection criteria</li> </ul>

<p>company in the future.</p>	<ul style="list-style-type: none"> <li>• Process</li> </ul>
<p>10. To create a solid Project Stakeholder Management Plan that identifies the different audiences that could positively and negatively impact the project, which facilitates the project development in running the camps outside of Vancouver in 2021 and in the future years.</p>	<ul style="list-style-type: none"> <li>• Stakeholder Plan</li> </ul>

Note. *By the author based on A Guide to the Project Management Body of Knowledge PMBOK Guide Sixth Edition 2017.*

## 4. Results

### 4.1 Project Integration Management

Project Management Integration is the process of identifying, defining, combining, unifying, and coordinating various Project Management Process Groups. It also includes characteristics of unification, consolidation, communication, and interrelationship among Project Management Knowledge Areas. (Institute, Plan Risk Management, 2017) This integration is entirely the responsibility of the project manager who will work with the specialist in each area. <sup>3</sup>

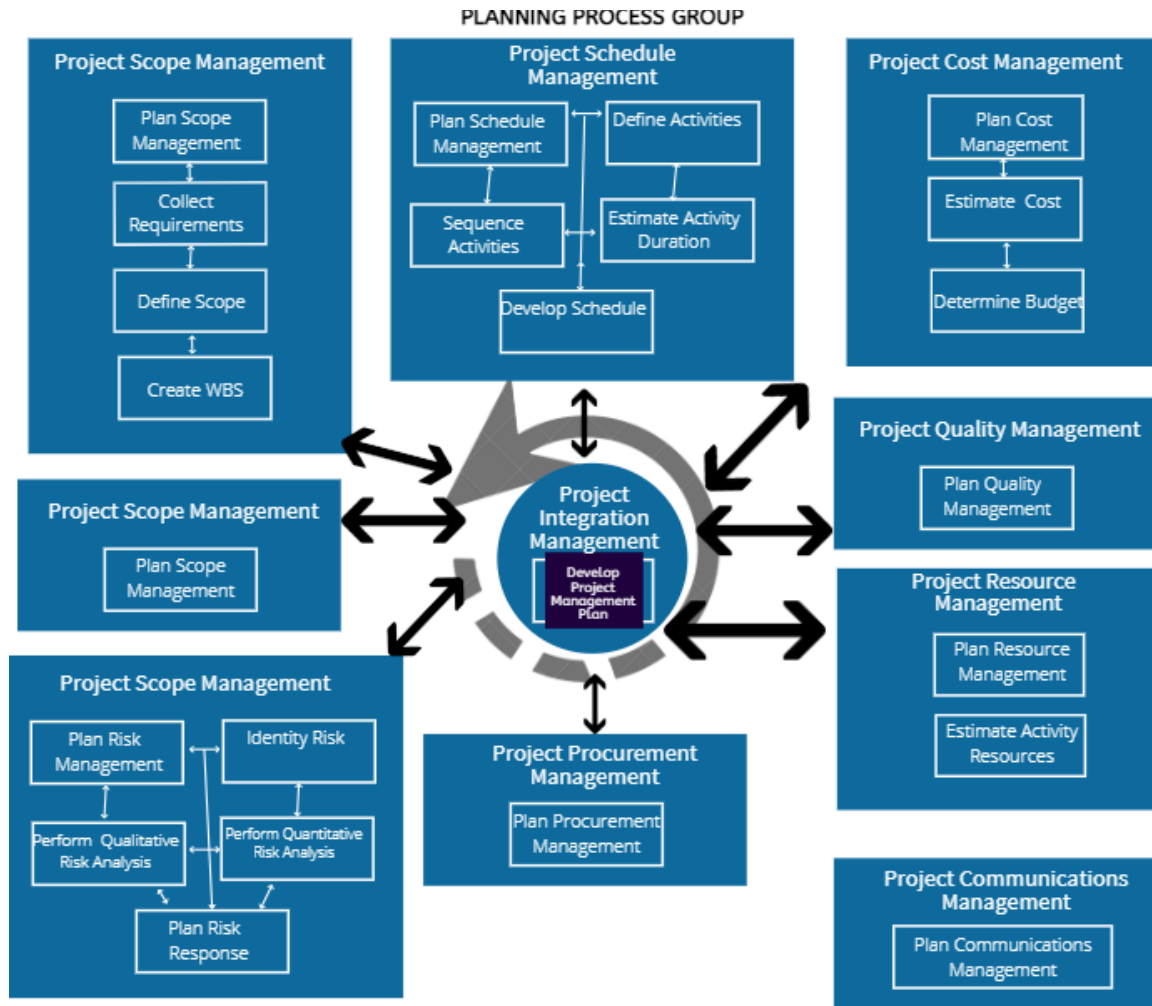
#### Figure 6

*Planning Process Groups*

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<sup>3</sup> *Project Integration Management includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups. In the project management context, integration includes characteristics of unification, consolidation, communication, and interrelationship. These actions should be applied from the start of the project through completion...Project Integration Management is specific to project managers. Whereas other Knowledge Areas may be managed by specialists (e.g., cost analysis, scheduling specialists, risk management experts), the accountability of Project Integration Management cannot be delegated or transferred. (Project Management Institute, 2017)*





Note. From *A Guide to The Project Management Body of Knowledge PMBok Guide in Pennsylvania*. (6th ed., p.566), by Project Management Institute, 2017. Copyright 2017 by Project Management Institute. The circular arrow means that processes are part of the Project Integration Management Knowledge Area.

### 4.2 Project Scope Management

The Project Scope Management includes the processes required to ensure that the project will do and work on only what it is required. (Project Management Institute, 2017) The processes included are Plan Scope Management, Collect Requirements, Define Scope, Create WBS, Validate deliverables, and Control of the Scope by managing the changes of the baseline.

### **4.2.1 Baseline of the project**

The definition of Base Line in accordance with the PMBOK Sixth edition is the approved version of the project, that when locked, can only have changes made through the change control procedures.

The main components of the base line are scope, time, and cost. In ZML Summer Camp Project the baseline of the project is as follows:

- Scope/deliverables: ZML will open 10 locations distributed in Vancouver (4), Calgary (2), Edmonton (2), and Victoria (2). Also, ZML will hire 20 engineers and digital design students in their last years from Co-op programs at UBC, SFU, BCIT, Alberta University, and UVIC in 2021.
- Schedule: The time to execute the project is 97.38 days in 2021.
- Cost: \$501,018 CDN – with \$40,081 CDN. as a contingency, which corresponds to the 8% of the project that will be allocated to rentals in case the prices of the locations increase.

#### **4.2.1.1 Work Breakdown structure**

The Work Breakdown Structure facilitates breaking down the project into smaller pieces to make the Summer Camp project more manageable. “WBS is a technique used for dividing and subdividing the project scope and project deliverables into smaller, more manageable parts. The work package is the work defined at the lowest level of the WBS for which cost and duration can be estimated and managed. The level of decomposition is often guided by the degree of control needed to effectively manage the project. The level of detail for work

packages will vary with the size and complexity of the project.” (Project Management Institute, 2017) See Table 6.

**Table 6**

**Work Breakdown Structure – Outline view**

<b>0. Summer Camps outside of Vancouver</b>				
<p><b>1. Locations BC &amp; Alberta</b></p> <p><b>1.1 Requirements (Loc)</b></p> <p>1.1.1 Check list criteria completed</p> <p>1.1.2 Video and photos per location</p> <p>1.1.3 List of emergency contacts at each location</p> <p>1.1.4 List of locations approved by ZML</p> <p><b>1.2 Locations Contracts</b></p> <p>1.2.1 Insurance contracts</p> <p>1.2.2 Check-list of compelling provincial bylaws</p> <p>1.2.3 Payment cycle schedule of locations</p> <p>1.2.4 Safety Plan Protocol per providence</p> <p>1.2.5 List of instructors' safety-</p>	<p><b>2. Human Resources</b></p> <p><b>2.1 HR Process</b></p> <p>2.1.1 Delivered HR process and procedures</p> <p><b>2.1.1.1 Recruitment &amp; Selection plan</b></p> <p>2.1.1.1.1 Contact list of Co-op Departments</p> <p>2.1.1.1.2 List of channels to promote job posting</p> <p>2.1.1.1.3 KSAO list per job requirements</p> <p>2.1.1.1.3.1 Job posting</p> <p>2.1.1.1.4 Interviews</p> <p>2.1.1.1.4.1 Short list of candidates</p> <p><b>2.2 Hiring and Onboarding plan</b></p> <p>2.2.1 Send proposal letter</p> <p>2.2.1.1 Proposal letter signed</p>	<p><b>3 Courses/projects</b></p> <p><b>3.1 List of courses and descriptions</b></p> <p>3.1.1 Course list</p> <p><b>3.2 List of projects by subject areas (STEAM- Design, Make, Play)</b></p> <p>3.2.1 List of materials selected per course and project (STEAM- Design, Make, Play) 3.2.1.1 Project kit per course</p>	<p><b>4 Marketing</b></p> <p><b>4.1 Marketing Plan</b></p> <p>4.1.1 Approved Marketing Plan</p> <p><b>4.2 Engagement plan</b></p> <p>4.2.1 Approved Engagement Plan</p>	<p><b>5 Sales</b></p> <p><b>5.1 Forecast Sales Plan</b></p> <p>5.1.1 Tracking sales</p> <p>5.1.1.1 Sales report</p> <p><b>5.2. Date base clients and locations.</b></p> <p>5.2.1. Validation of data base on the CRM system</p> <p>5.2.1.1 Database updated</p>

<p>checks (2) and CPR certifications</p>	<p>2.2.2 Training plan</p>				
<p>(2)</p>	<p>2.2.2.1 Videos content list</p>				
<p>1.2.6 Location contracts check-</p>	<p>2.2.2 Shadowing schedule</p>				
<p>list completed</p>	<p>2.2.2.3 Survey employee feedback</p>				
<p>1.2.7 Contracts signed</p>	<p>2.2.2.4 Employee report</p>				
	<p>2.3 Description of job location</p>				
	<p>2.3.1 Location information</p>				
	<p><b>2.3 Ofboarding plan</b></p>				
	<p>2.3.1 Check list of documents completed</p>				
	<p>2.3.2 Employee final report and survey</p>				

Note. Source by the author

#### **4.2.1.2 Work Breakdown Dictionary**

The WBS dictionary is a vital document, and without it you cannot monitor the performance of a project. The WBS dictionary is part of the scope baseline; the other two components are the scope statement and work breakdown structure. (Project Management Institute, 2017) ZML Workbreakdown dictionary will guarantee each stage is revised and approved.

**Table 7**

**WBS Dictionary**

Item	WBS	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost	Milestones
<b>1 Initiation Phase</b>									
1	0	Zen Maker Lab Summer Camps outside of Vancouver	97.38 days	Fri 1/14/22	Wed 6/1/22			\$88,618.40	
2		Start	0 days	Fri 1/14/22	Fri 1/14/22				
<b>2 Planning Phase</b>									
3	1, 1.1, 1.1.1	Locations search	97.38 days	Fri 1/14/22	Wed 6/1/22	1	Cop 1, Jonas, Cyri	\$25,996.00	
4	1.2.2	Check-list of compelling provincial bylaw	1 day	Wed 4/27/22	Wed 4/27/22	12,11	Jonas,Mile	\$440.00	
5	2, 2.1	HR Process	78.13 days	Fri 1/14/22	Wed 5/4/22	1	Carla, Taner, Gabriel, Cyri	\$26,051.20	
6	2.1.1.1	Recruitment & Selection Plan	30 days	Mon 1/31/22	Fri 3/11/22	21	Carla, Taner, Gabriel, Cyri	\$15,584.00	
7	2.2	Hiring & Onboarding Plan	38 days	Mon 3/14/22	Wed 5/4/22	30	Carla, Taner, Gabriel, Cyri	\$8,747.20	
8	2.2.2	Training Plan Instructors	30 days	Thu 3/24/22	Wed 5/4/22	35	Ela, Carla	\$7,100.80	
9	3	List of courses and descriptions	66.25 days	Fri 1/14/22	Tue 4/19/22	1	Cyri, Taner, Ela	\$31,371.20	
10	3.2	Supplies	52 days	Fri 2/4/22	Tue 4/19/22	46	Ela, Carol, Milena,Cop1, Cans, Cop, Taner	\$27,931.20	

11	3.2.1	List of material selected per course project	6 days	Fri 2/4/22	Mon 2/14/22	44	Ela,Carol	\$2,976.00	
12	4	Marketing & Engagement plans	5.25 days	Mon 2/7/22	Mon 2/14/22	47	Carla, Jonas, Cyri, Taner	\$1,560.00	
13	4.1	Social Media Campaign	1 day	Mon 2/7/22	Mon 2/7/22		Jonas	\$240.00	
14	4.1	Email Marketing Campaing	1 day	Mon 2/7/22	Mon 2/7/22		Carla	\$0.00	
15	4.1	Google Adds Campaing	1 day	Mon 2/7/22	Mon 2/7/22		Carla	\$0.00	
16	4.1	SEO Campaign	1 day	Mon 2/7/22	Mon 2/7/22		Carla	\$0.00	
17	4.2	Develop Community Engagement Activities	1 day	Mon 2/7/22	Mon 2/7/22		Carla,Jonas	\$240.00	
18	5	Sales Strategy	1 day	Tue 2/8/22	Tue 2/8/22	54,55,56,57,58	Carla,Cyri,Jonas	\$240.00	
19	5	Sales	67 days	Mon 2/28/22	Wed 6/1/22	62,53	Jonas, Carla, Taner	\$3,640.00	
20	5.1	Forecast Sales Plan	67 days	Mon 2/28/22	Wed 6/1/22		Jonas, Carla, Taner	\$3,640.00	
<b>3 Execution and Control Phase</b>									
21	1.1.4, 1.1.1, 1.1.4	List of locations approved by ZML	97.38 days	Fri 1/14/22	Wed 6/1/22	1	Cyri	\$22,206.00	



22	1.1.4, 2.1.1.1.1, 2.1.1.1.2, 5.2.1	Databases (Community centers, schools, churches & universities)	32.88 days	Fri 1/14/22	Wed 3/2/22	1	Cop1	\$4,734.00	
23	1.1.1, 5.2.1, 5.2.1.1	Database fields completed	0 days	Wed 3/2/22	Wed 3/2/22	4	Cop1		
24	5.2.1, 5.2.1.1	Validation of data base on the CRM System	67 days	Mon 2/28/22	Wed 6/1/22	72FF	Cop1	\$9,648.00	
25	1.1.2	Videos and photos per location	16 days	Wed 3/2/22	Thu 3/24/22	5		\$0.00	
26	1.1.3, 5.2.1.1	List of emergency contact at each location	16 days	Wed 3/2/22	Thu 3/24/22	7SS	Cop, Jonas	\$6,144.00	
27	1.1.4	Check-list criteria completed	7 days	Thu 3/24/22	Mon 4/4/22	8	Jonas	\$1,680.00	
28	1.2	Location Contracts	28.75 days	Mon 4/4/22	Fri 5/13/22	9		\$3,790.00	
29	1.2.5, 1.2.6, 2.2.5, 1.2.5	Prepare contracts, instructors documents (CPR & CRC) and Safety Plan	16 days	Mon 4/4/22	Tue 4/26/22	9,35	Mile	\$3,200.00	
30	1.2.1	Insurance Contract	0.25 days	Tue 4/26/22	Tue 4/26/22	11	Mile	\$50.00	
31	1.2.6	Sign Contracts	11 days	Thu 4/28/22	Thu 5/12/22	13	Cyri	\$0.00	

32	1.2.3	Payment cycle schedule of locations	0.5 days	Fri 5/13/22	Fri 5/13/22	14	Mile	\$100.00	
33	1.2.7	Filling-signed contracts	0 days	Fri 5/13/22	Fri 5/13/22	14,15	Mile		
34	2.1, 2.2, 2.3, 2.1.1, 2.1.1.1, 2.1.1.1.3	Write HR process and procedures	7.13 days	Fri 1/14/22	Tue 1/25/22	1	Carla	\$0.00	
35	2.1.1, 2.2, 2.3	Revise HR Process	1 day	Wed 1/26/22	Wed 1/26/22	18	Tanner, Gab	\$760.00	
36	2, 2.1, 2.2, 2.3	Approve document	2 days	Thu 1/27/22	Fri 1/28/22	19	Cyri, Gab	\$960.00	
37	2, 2.1, 2.2, 2.3	Presentation HR Process	0 days	Fri 1/28/22	Fri 1/28/22	20			
38	2.1.1.1.3	KSAO list per job requirement	1.5 days	Mon 1/31/22	Tue 2/1/22	21	Carla	\$0.00	
39	2.1.1.1.3, 2.1.1.1.3.1	Create job postings	0.25 days	Fri 2/4/22	Fri 2/4/22	23	Carla, Ela	\$64.00	
40	2.1.1.1.3, 2.1.1.1.3.1	Approve job postings	0.25 days	Mon 2/7/22	Mon 2/7/22	23	Cyri	\$0.00	
41	2.1.1.1.1, 2.1.1.1.2	List of Channels to promote job posting	0.5 days	Tue 2/1/22	Tue 2/1/22	23	Carla, Jonas	\$120.00	
42	2.1.1.1.1	Contact Co-op Departments	1 day	Wed 2/2/22	Wed 2/2/22	26	Carla	\$0.00	
43	2.1.1.1.4	Interview prospects	25 days	Thu 2/3/22	Wed 3/9/22	27	Tanner	\$7,000.00	
44	2.1.1.1.4	Select final candidates	2 days	Thu 3/10/22	Fri 3/11/22	28	Cyri	\$0.00	

45	2.1.1.1.4.1	List of final candidates	0 days	Fri 3/11/22	Fri 3/11/22	29	Carla		
46	2.2.1	Send job offer letter	4 days	Mon 3/14/22	Thu 3/17/22	30	Mile	\$800.00	
47	2.2.1.1	Response of job offers	3 days	Fri 3/18/22	Tue 3/22/22	32	CandS	\$566.40	
48	2.3, 2.3.1	Finalize instructors' locations	1 day	Wed 3/23/22	Wed 3/23/22	33	Tanner	\$280.00	
49	1.2.5	List of instructors per location	0 days	Wed 3/23/22	Wed 3/23/22	34	Tanner		
50	2.2.2.1	Video Content list	25 days	Thu 3/24/22	Wed 4/27/22		Ela	\$6,400.00	
51	2.2.2.2	Shadowing Schedule	0.5 days	Thu 4/28/22	Thu 4/28/22	37	Ela	\$128.00	
52	2.2.2.3	Survey	0.5 days	Thu 4/28/22	Thu 4/28/22	38	Ela	\$128.00	
53	2.2.2.3	Employees feedback	1 day	Fri 4/29/22	Fri 4/29/22	39	CandS	\$188.80	
54	2.2.2.4	Employee Report (Training completed)	1 day	Mon 5/2/22	Mon 5/2/22	40	Ela	\$256.00	
55	2.3, 2.3.1, 2.3.2	Add performance model in HRIS	2 days	Tue 5/3/22	Wed 5/4/22	41	Carla	\$0.00	
56	3.1	Shortlist camps	2.88 days	Fri 1/14/22	Wed 1/19/22	1	Cyri	\$0.00	
57	3.1, 3.1.1	Write content camps	6 days	Thu 1/20/22	Fri 1/28/22	44	Tanner,Ela	\$3,216.00	
58	3.1.1	Approve content	5 days	Fri 1/28/22	Fri 2/4/22	45	Cyri	\$0.00	

59	3.1.1	Send content approved to marketing	0.88 days	Fri 2/4/22	Fri 2/4/22	46	Ela	\$224.00	
60	3.2.1	Order supplies	10 days	Mon 2/14/22	Mon 2/28/22	49	Mile	\$2,000.00	
61	3.2.1	Update inventory	7 days	Mon 2/28/22	Wed 3/9/22	50	Cop1	\$1,008.00	
62	3.2.1.1	Prepare supplies into project kits	29 days	Wed 3/9/22	Tue 4/19/22	51	CandS,Cop,Cop1,Tanner	\$21,947.20	
63	4.1.1, 4.2.1	Revise plans	3 days	Wed 2/9/22	Fri 2/11/22	59	Tanner	\$840.00	
64	4.1.1, 4.2.1	Approve	0.25 days	Mon 2/14/22	Mon 2/14/22	60	Cyri	\$0.00	
65	4.1.1, 4.2.2	Presentation Marketing Plan	0 days	Mon 2/14/22	Mon 2/14/22	61			
66	5.1.1	Tracking Sales	67 days	Mon 2/28/22	Wed 6/1/22			\$3,640.00	
67	5.1.1.1	Sales Report 1	1 day	Mon 2/28/22	Tue 3/1/22	62FS+10 days	Jonas,Carla,Tanner	\$520.00	
68	5.1.1.1	Sales Report 2	1 day	Tue 3/15/22	Wed 3/16/22	66FS+10 days	Jonas,Carla,Tanner	\$520.00	
69	5.1.1.1	Sales Report 3	1 day	Wed 3/30/22	Thu 3/31/22	67FS+10 days	Jonas,Carla,Tanner	\$520.00	
70	5.1.1.1	Sales Report 4	1 day	Thu 4/14/22	Fri 4/15/22	68FS+10 days	Jonas,Carla,Tanner	\$520.00	
71	5.1.1.1	Sales Report 5	1 day	Fri 4/29/22	Mon 5/2/22	69FS+10 days	Jonas,Carla,Tanner	\$520.00	
72	5.1.1.1	Sales Report 6	1 day	Mon 5/16/22	Tue 5/17/22	70FS+10 days	Jonas,Carla,Tanner	\$520.00	
73	5.1.1.1	Sales Report 7	1 day	Tue 5/31/22	Wed 6/1/22	71FS+10 days	Jonas,Carla,Tanner	\$520.00	
74	7	Start Summer Camps	0 days	Wed 6/1/22	Wed 6/1/22	72,52,42,16			

**Note.** *Source prepared by the author*

### **4.2.2 Project Requirements**

Project Requirements describes the requirements of the project and the importance for ZML. "These describe the actions, processes, or other conditions the project needs to meet." (Project Management Institute, 2017) It will establish the acceptance of the requirements.

The prioritization method in the project requirements is MoSCoW, which is a popular technique for managing requirements. However, it will be use numbers to facilitate the visualization data as it is described bellow:

1. Must have: not negotiable needs, mandatory.
2. Should have: important but it is not vital.
3. Could have: it adds a minimum value to the project.
4. Won't have: it is not a priority.

#### **Table 8**

*Requirement list and Requirement analysis*

**PROJECT REQUIREMENTS**

<b>Project No</b>	1	<b>Project Name</b>	Zen Maker lab's Project Management Plan for Summer Camps outside of North Vancouver
<b>Date:</b>	January 14 - May 8, 2022	<b>PROJECT MANAGER:</b>	Carolina C. Vecino

REQUIREMENT LIST						REQUIREMENTS ANALYSIS			
ID	Requirement Description	Requested by	Category	Priority	Acceptance Criteria	Complexity	In scope?	Test or Verification	Phase or Release
1	To generate data bases of schools, universities, community centers and churches with the following camps: institution name, institution type, phone number, address, city, contact name, title, email address, phone number	Cyri Jones - Sponsor	Operational	1	Number of institutions contacted to run summer camps Vs numbers of closer contracts.	Simple	Yes	Save in Company G Drive - File:Summer Camp 22- Data Bases	January 14 - May 8 2022
2	To generate the contracts for each location which includes: Instructors criminal check, and first aid; insurance, safety plan. Add information to Zen calendar payments	Cyri Jones - Sponsor	Operational and technical	1	Compilation of contract documents Vs start date of summer camps	High	Yes	Save in Company G Drive - File:Summer Camp 22- Contracts	By June 3 all contracts must be ready
3	Delivered HR process and procedures	Cyri Jones - Sponsor	Operational and technical	1	Implementation of the HR Process to start hiring	High	Yes	Save in Company G Drive - File: HR - HR Process	By February 4, 2022

4	To follow a Recruitment and Selection Plan for the Summer Camps	Cyri Jones - Sponsor	Operational and technical	1	Number of applications per job posting VS selected candidates	High	Yes	Save in Company G Drive - File: HR - HR Process	By February 4, 2022
5	To follow the training process for everyone, but especially for the new hirings	Cyri Jones - Sponsor	Operational and technical	1	Number of hirings on time Vs completed training before summer camp start date	High	Yes	Save in Company G Drive - File: HR - HR Process	By June 1
6	To develop training content must be saved in Summer Camp 22 - Training Content	Cyri Jones - Sponsor	Operational and technical	3	Number of training material finished by the time people are hired	High	Yes	Save in Summer Camp 22 - Training Content	By April 29
7	To complete the offboarding process	Cyri Jones - Sponsor	Operational and technical	1	Check list of offboarding employees completed Vs people who finished contract at Zen Maker Lab	High	Yes	Save in Company G Drive - File: HR - HR Process and Training content must be saved in Summer Camp 22 - Training Content	By February 4, 2022
8	To apply survey to employees at the beginning and at the end of their contract	Cyri Jones - Sponsor	Operational, technical, and KPIs	3	Onboarding survey Vs Offboarding survey	Simple	Yes	Save in Bamboo HR software under employee's file	at the beginning of the contract and at the end



9	To create project list & courses that include materials	Cyri Jones - Sponsor	Operational and technical	1	Number of projects per area and materials Vs budget	High	Yes	Save in Company G Drive - File: Summer camp 2022- Projects and Course List	By February 4, 2022
10	To create a Marketing Plan	Cyri Jones - Sponsor	Operational and technical	1	Marketing time plan approved Vs real-time for execution	High	Yes	Save in Company G Drive - File: Summer camp 2022- Marketing Plan	By January 21
11	To create a Social Media campaign	Cyri Jones - Sponsor	Operational, technical, and KPIs	3	Social Media campaign approved Vs real-time for execution	Low	Yes	Save in Company G Drive - File: Summer camp 2022- Marketing Plan	By January 21
12	To create an email marketing campaign	Cyri Jones - Sponsor	Operational, technical, and KPIs	2	Number of openings Vs number of registration	High	Yes	Save in Company G Drive - File: Summer camp 2022- Marketing Plan	By January 21
13	To create a Google Ads campaign	Cyri Jones - Sponsor	Operational, technical, and KPIs	2	Number of clicks Vs registrations	Minimum	Yes	Save in Company G Drive - File: Summer camp 2022- Marketing Plan	By January 21
14	To create a SEO campaign	Cyri Jones - Sponsor	Operational, technical, and KPIs	2	Increased number of visits to the website VS inquiries	Minimum	No	Save in Company G Drive - File: Summer camp 2022- Marketing Plan	By January 21

15	To develop community engagement activities	Cyri Jones - Sponsor	Operational, technical, and KPIs	2	Number of stakeholders reach Vs responses	Minimum	Yes	Save in Company G Drive - File: Summer camp 2022- Marketing Plan	By January 21
16	To develop a sales strategy	Cyri Jones - Sponsor	Operational, technical, and KPIs	1	Funnel creation Vs conversion	High	Yes	Save in Company G Drive - File: Summer camp 2022- Marketing Plan	By January 21

Note. Source prepared by the author

### **4.2.3 Requirements Traceability Matrix**

The following Matrix Diagram allows linking the value of Zen Maker Lab with the objectives of the Summer Camp Project. “Traceability matrix is a grid that links product requirements from their origin to the deliverables that satisfy them. The implementation of a requirements traceability matrix helps ensure that each requirement adds business value by linking it to the business and project objectives.” (Project Management Institute, 2017)

#### **Table 9**

*Traceability Matrix*

## TREASABILITY MATRIX - SUMMER CAMP ZEN MAKER LAB

ID	ASS. ID	Requirements Description	Business Need Justification	Project objective	Requested by	Team responsible	WBS	Status	Design
1	1.1	Locations search in BC & Alberta	Expansion	Flow in the delivery of programs out of North Van	Cyri	Cyri,Jonas, Co-op	1, 1.1, 1.1.1	Finished	Finished
2	1.1.1	Location criteria list	Find places easy to access for kids and parents	It would guarantee a large number of registrations	Cyri	Jonas, Co-op	1, 1.1, 1.1.1, 1.1.2, 1.2.2, 1.1.4	Finished	Finished
3	1.1.2	Well-equipped classrooms for delivering the classes	Bring an excellent learning experience	Kids would like to register to more courses	Cyri	Jonas, Co-op	1.1.2	Finished	Finished
4	1.1.3	Select locations	Select accessible places, well equipped, and affordable	Offer a great STEAM experience	Cyri	Cyri	1.1.4	Finished	Finished
5	1.1.4	Find partnerships or establish alliances with schools, community centers or churches	Expansion	Business expansion	Cyri	Carla, Jonas	4.2	Finished	Finished
6	1.1.5	Data base	Contacts list to reach or engage in the future	Market research	Cyri	Jonas, Co-op	1.1.4, 2.1.1.1.1,2,1.1.1.2, 5.2.1, 5.2.1.1	Finished	Finished
7	1.2.	Contracts of selected locations	Find best locations & fare investment (Price)	Leverage locations towards finding alliences and possible partnerships	Cyri	Milena, Jonas, Cyri	1.1.3, 1.2.1, 1.1.4,1.2	Finished	Finished
8	1.2.1	Insurance	Guarantee a safe and adequate space for students and instructors	Spaces to design, make, and play	Cyri	Milena	1.2.1	Finished	Finished
9	1.2.2	Compelling provincial bylaws	Avoid inconvenience	Follow provincial requirements	Cyri	Jonas, Milena	1.2.2	Finished	Finished
10	1.3	Instructors	Hire a group of instructors that empower the next generation of of designers, maker and active citizens	Proud to offer quality STEM education and innovative programs for kids, youth and adults in STEAM.	Cyri	Carla, Tanner, Gabriel, Cyri	2, 2.1, 2.1.1.1, 2.2, 2.2.2, 2.1.1.1.3,2.1.1.1.3.1, 2.1.1.1.1, 2.1.1.1.2,	Finished	Finished
11	1.3.1	Contact co-op students from universities in BC and Alberta	Hire instructors in engineering, design, UX-UI, science, math, and technology	Deliver quality education in STEAM	Cyri	Cyri, Tanner	2.1.1.1.1	Finished	Finished

12	1.3.2	Instructors documentation (CPR, Criminal record check)	Compelling provincial bylaws	Hiring individuals passionate about STEAM education	Cyri	Milena	1.2.5, 1.2.6, 2.2.5, 1.2.5	Finished	Finished
13	1.3.3	KSAO	Hiring people passionate about STEAM education	Deliver quality education in STEAM	Cyri	Carla	2.1.1.1.3	Finished	Finished
14	1.3.4	<b>Recruitment &amp; Selection criteria</b>	Hiring people passionate about STEAM education	Deliver quality education in STEAM	Cyri	Cyri, Carla, Tanner	2.1.1.1	Finished	Finished
15	1.3.4.1	Job posting creation & publication	Hire instructors in engineering, design, UX-UI, science, math, and technology	Deliver quality education in STEAM	Cyri	Carla	2.1.1.1.3, 2.1.1.1.3.1	Finished	Finished
16	1.3.4.2	Resume selection	Hire instructors in engineering, design, UX-UI, science, math, and technology	Deliver quality education in STEAM	Cyri	Cyri, Tanner	2.1.1.1.4, 2.1.1.1.4.1	Finished	Finished
17	1.3.4.3	Other documents: grades, projects and volunteer activities	Hiring people passionate about STEAM education	Deliver quality education in STEAM	Cyri	Cyri, Tanner	2.1.1.1.3	Finished	Finished
18	1.3.5	<b>Onboarding process</b>	Hire a group of instructors that empower the next generation of designers, maker and active citizens	By providing STEAM we have been able to craft a curriculum that explores a design, make, and play approach.	Cyri	Cyri, Tanner, Elaheh	2.2	Finished	Finished
19	1.3.5.1	Training the trainers	Hire a group of instructors that empower the next generation of designers, maker and active citizens	By providing STEAM we have been able to craft a curriculum that explores a design, make, and play approach.	Cyri	Ela	2.2.2.1, 2.2.2.2, 2.2.2.3, 2.2.2.4	Finished	Finished
20	1.3.5.1.1	Meetings	Hire a group of instructors that empower the next generation of designers, maker and active citizens	By providing STEAM we have been able to craft a curriculum that explores a design, make, and play approach.	Cyri	Ela	2.2.2.2	Finished	Finished
21	1.3.5.1.2	Videos	Hire a group of instructors that empower the next generation of designers, maker and active citizens	By providing STEAM we have been able to craft a curriculum that explores a design, make, and play approach.	Cyri	Cyri, Tanner, Ela	2.2.2.1	Finished	Finished
22	1.3.5.1.3	Road map	Hire a group of instructors that empower the next generation of designers, maker and active citizens	By providing STEAM we have been able to craft a curriculum that explores a design, make, and play approach.	Cyri	Carla	2.1.1.1	Finished	Finished

23	1.3.5.1.4	Mock up & Testing	Hire a group of instructors that empower the next generation of designers, maker and active citizens	By providing STEAM we have been able to craft a curriculum that explores a design, make, and play approach.	Cyri	Cyri, Tanner, Ela	3	Finished	Finished
24	1.3.5.1.5	Employees feedback	Hire a group of instructors that empower the next generation of designers, maker and active citizens	By providing STEAM we have been able to craft a curriculum that explores a design, make, and play approach.	Cyri	CandS	2.2.2.3	Finished	Finished
25	1.3.6	<b>Offboarding</b>	Compelling provincial bylaws	Compelling provincial bylaws	Cyri	Carla	2.3, 2.3.1, 2.3.2	Finished	Finished
26	1.3.6.1	Co-op department report	Keep a close working relationship with over 200 different schools, colleges, universities, and school districts.	Keep growing a close working relationship with educational institutions	Cyri	Carla	2.1.1.1.1	Finished	Finished
27	1.3.6.2	Employees feedback end of term	Provide the best learning experience for children and instructors	By providing STEAM we have been able to craft a curriculum that explores a design, make, and play approach.	Cyri	CandS	2.2.2.3	Finished	Finished
28	1.4	<b>List of projects and classes</b>	Provide a learning experience that prepares children for the future	Maintain content updated	Cyri	Ela, Carol, Milena, Cop1, CandS, Cop, Tanner	3.1	Finished	Finished
29	1.4.1	Update projects content	Provide a learning experience that prepares children for the future	Maintain content updated	Cyri	Tanner, Ela, Cyri	3.1, 3.1.1	Finished	Finished
30	1.4.2	Check material of projects	Provide a learning experience that prepares children for the future	Fulfill expectations and requirements	Cyri	Tanner, Elaheh	3.2, 3.2.1, 3.2.1	Finished	Finished
31	1.5	<b>Copies of projects and classes to be promoted</b>	Leaders in STEAM education	craft a curriculum that explores a design, make, and play approach.	Cyri	Ela	3.1.1	Finished	Finished
32	1.5.1	Marketing plan	Provide a learning experience that prepares children for the future	Guarantee enough support to sales to succeed in generating leads in the new locations	Cyri	Carla, Jonas, Cyri, Tanner	4	Finished	Finished
33	1.5.2	Social media campaign	Provide a learning experience that prepares children for the future	Guarantee enough support to sales to succeed in generating leads in the new locations	Cyri	Jonas	4.1	Finished	Finished

34	1.5.3	Make a list of channels available at new locations to promote ZML camps	Contacts list to reach o engage in the future	Guarantee enough support to sales to succeed in generating leads in the new locations	Cyri	Jonas Lopez	4	Finished	Finished
35	1.5.4	Email marketing campaign	Contacts list to reach o engage in the future	Guarantee enough support to sales to succeed in generating leads in the new locations	Cyri	Carla	4.1	Finished	Finished
36	1.5.5	Google ads campaign	Provide a learning experience that prepares children for the future	Guarantee enough support to sales to succeed in generating leads in the new locations	Cyri	Carla	4.1	Finished	Finished
37	1.5.6	Demos in open spaces	Provide a learning experience that prepares children for the future	Guarantee enough support to sales to succeed in generating leads in the new locations	Cyri	Carla, Jonas	4.2	Finished	Finished
38	1.5.6	Engage with communities at community centers	Provide a learning experience that prepares children for the future	Guarantee enough support to sales to succeed in generating leads in the new locations	Cyri	Carla, Jonas	4.2	Finished	Finished
39	1.6	Sales	Provide a learning experience that prepares children for the future	Generate leads in all locations	Cyri	Cyri, Jonas, Carla	5, 5.1, 5.1.1, 5.1.1.1	Finished	Finished

Note. Source by the author based on A Guide to the Project Management Body of Knowledge PMBOK Guide Sixth Edition

#### 4.2.4 Roles and Responsibilities

The following are the roles and responsibilities of the Project Sponsor, Project Manager, Internal Team, and Shareholders.

**Table 10**

*Roles and Responsibilities*

Role	Name	Responsibility
Sponsor	Cyri Jones – Zen Maker Lab’s Founder and President	Approve scope or change requests Evaluate needs Accept project deliverables
Internal team	Tanner Brine – Director of Operations	Work and bring input in plans and tasks. Evaluate needs Execute tasks
	Jonas Lopez – Manager of Community and customer engagement	Bring input in plans Execute tasks
	Spencer Brow – Manager Digital Media	Bring input in plans Execute tasks
	Elaheh Khorvash Manager, Training & Development	Bring input in plans Execute tasks



Project Manager	Carolina Cifuentes Vecino	<p>Planning and monitoring each task</p> <p>Ensuring each item is completed in a timely manner.</p> <p>Managing resources, and team's time.</p> <p>Communicating status of the project</p> <p>Contacting different stakeholders</p> <p>Facilitate changes</p>
Stakeholders - Locations	<p>Possible locations in</p> <p>Private Schools</p> <p>RECenters</p> <p>Community Centers</p> <p>Churches</p>	They can impact the scope due to changes in the rentals and schedule availability.
Stakeholders - (School entities)	<p>Parents Advisory Committee</p> <p>School Districts</p>	They can negatively impact the access of private institutions to schools.
Stakeholders - Parents	<p>Parents who register their kids in the camps</p>	They can turn down the registrations
Stakeholders - Universities	<p>Co-op Departments of Universities</p>	<p>Involved directly in the project.</p> <p>They will help us find the best students to teach STEAM classes</p>
Stakeholders - Government	<p>Federal &amp; Provincial Government</p>	Involved indirectly. The legislation changes from

		province to province.
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Note. Source by the author based on *A Guide to the Project Management Body of Knowledge PMBOK Guide Sixth Edition*

#### **4.2.5 Project Charter**

It is the way of formalizing the project and establishes who will be leading the project and the resources that will be assigned. The benefit of this process is to link the project with the objectives of the organization and create a clear path for success.<sup>4</sup>

Find Project Charter of the project in the annex of this document.

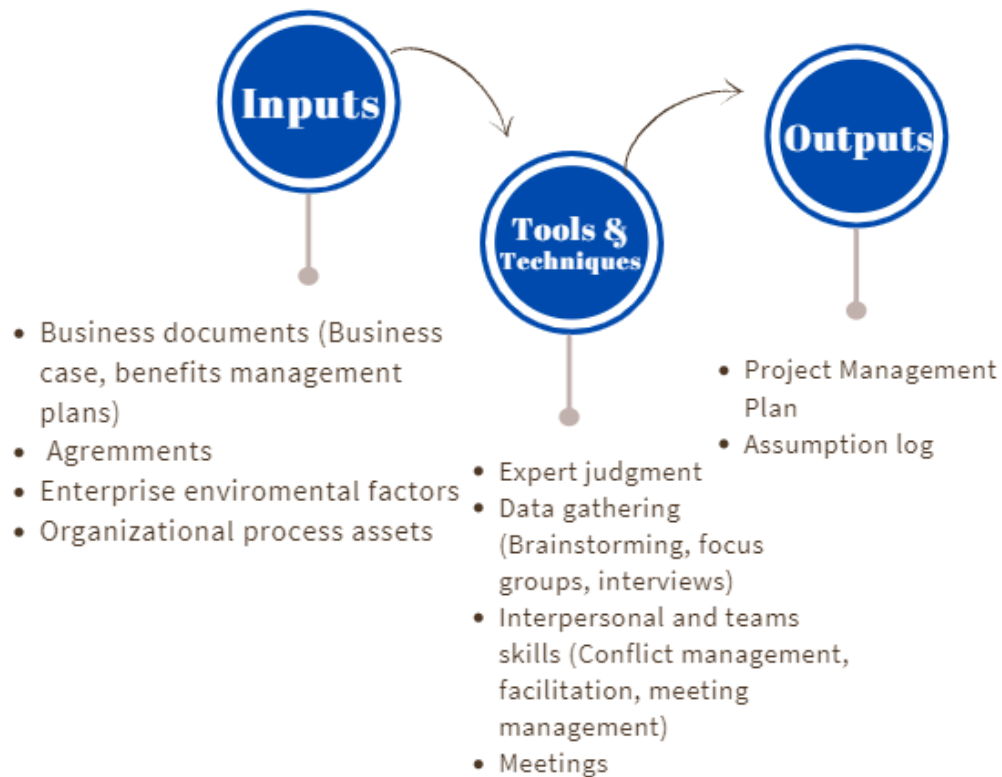
#### **Figure 7**

*Inputs, Tools & Techniques & Outputs*

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<sup>4</sup> "Develop Project Charter is the process of developing a document that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities. The key benefits of this process are that it provides a direct link between the project and the strategic objectives of the organization, creates a formal record of the project, and shows the organizational commitment to the project." (Project Management Institute, 2017)

## Develop a Project Charter



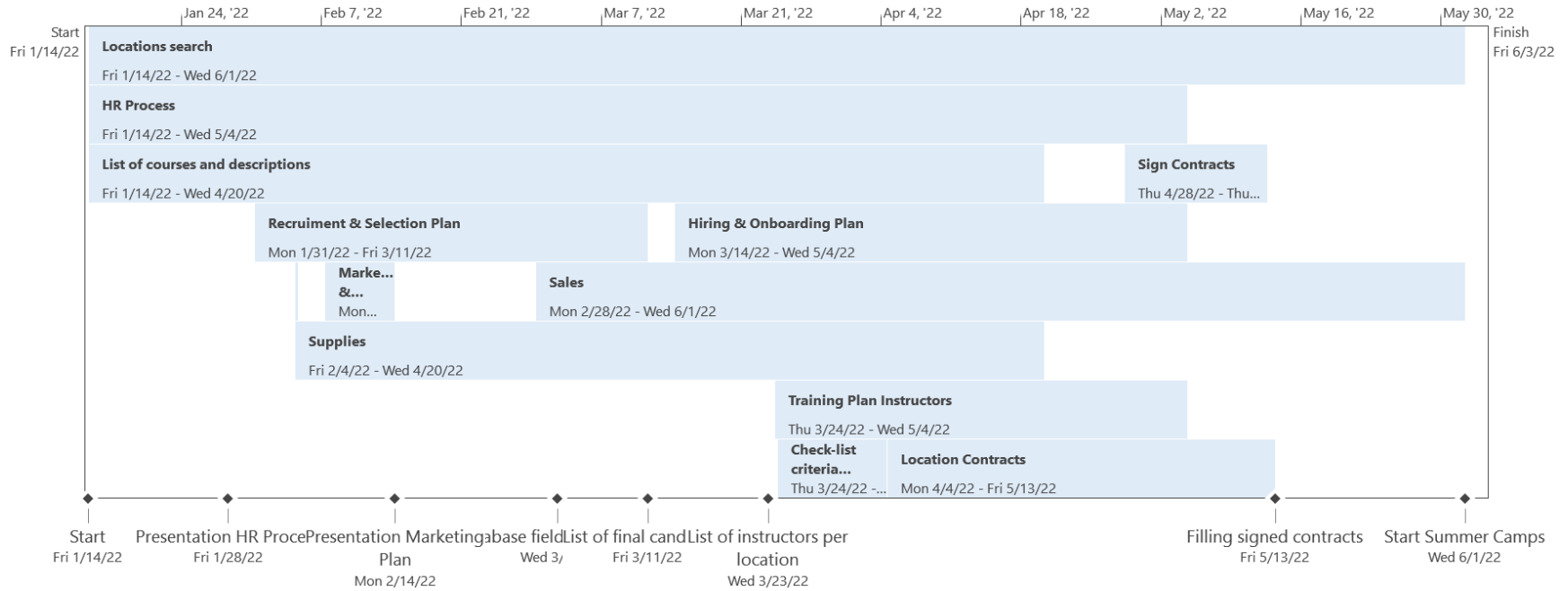
Note. Source by the author based on A Guide to the Project Management Body of Knowledge PMBOK Guide Sixth Edition.

### 4.3 Project Schedule Management

Project Management Schedule allows the project manager to keep the project on track and it shows how the product or service will be delivered. In the Guide to the Project Management Body of Knowledge PMBok Guide Sixth edition, the definition includes six processes: Plan Schedule Management, Define activities, Sequence, Estimate Activities, Develop Schedule, and Control Schedule. (Project Management Institute, 2017)

**Figure 8**

*Project Schedule Timelines*



Note. Develop Schedule: Tools and Techniques. View MS Projects. The view above allows a quick vision about the project in time and Milestones. Source prepared by the author.

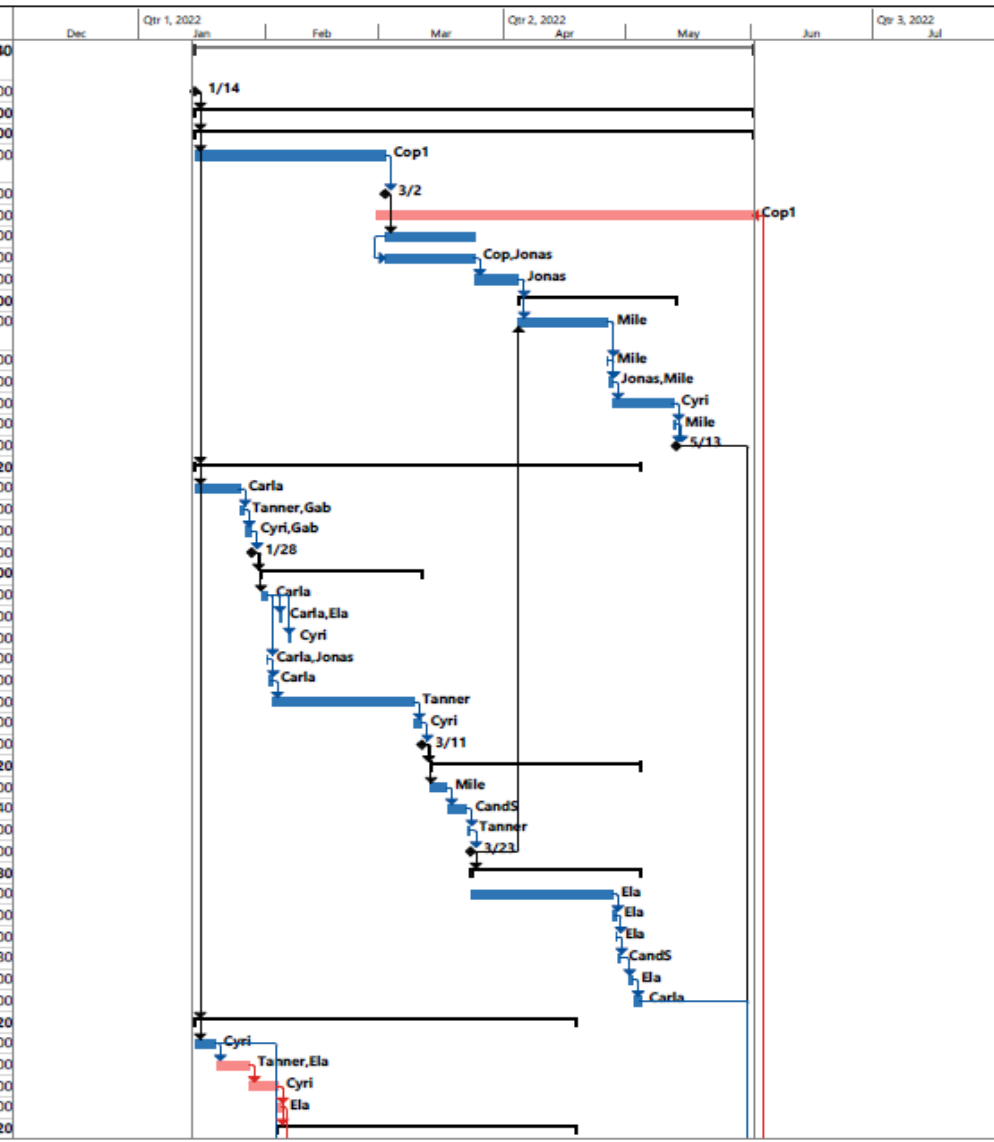
### **4.3.1 Gantt Chart**

It is an easy way to communicate the activities of the project and visualize and summarize the information. The milestone mark is a completion of a deliverable or a key fact. Also, the Gantt chart contains the WBS id to integrate the schedule and facilitate new changes in future summer camps outside of Vancouver.

#### **Figure 9**

*Gantt Chart*

ID	Task Mode	Task Name	WBS	Duration	Start	Finish	Predecessors	Resource Names	Cost	Dec	Qtr 1, 2022	Jan	Feb	Mar	Qtr 2, 2022	Apr	May	Jun	Qtr 3, 2022	Jul
0		<b>Zen Maker Lab Summer Camps outside of Vancouver</b>	0	<b>97.38 days</b>	<b>Fri 1/14/22</b>	<b>Wed 6/1/22</b>			<b>\$88,618.40</b>											
1		Start	0	0 days	Fri 1/14/22	Fri 1/14/22			\$0.00											
2		Locations search	1.1.1, 1.1.1	97.38 days	Fri 1/14/22	Wed 6/1/22	1		\$25,996.00											
3		List of locations approved by ZML	1.1.4, 1.1.1, 1.1.4	97.38 days	Fri 1/14/22	Wed 6/1/22	1	Cyri	\$22,206.00											
4		Databases (Community centers, schools, churches & universities)	1.1.4, 2.1.1.1.1, 2.1.1.1.2, 5.2.1	32.88 days	Fri 1/14/22	Wed 3/2/22	1	Cop1	\$4,734.00											
5		Database fields completed	1.1.1, 5.2.1, 5.2.1.1	0 days	Wed 3/2/22	Wed 3/2/22	4	Cop1	\$0.00											
6		Validation of data base on the CRM System	5.2.1, 5.2.1.1	67 days	Mon 2/28/22	Wed 6/1/22	72FF	Cop1	\$9,648.00											
7		Videos and photos per location	1.1.2	16 days	Wed 3/2/22	Thu 3/24/22	5		\$0.00											
8		List of emergency contact at each location	1.1.3, 5.2.1.1	16 days	Wed 3/2/22	Thu 3/24/22	755	Cop,Jonas	\$6,144.00											
9		Check-list criteria completed	1.1.4	7 days	Thu 3/24/22	Mon 4/4/22	8	Jonas	\$1,680.00											
10		Location Contracts	1.2	28.75 days	Mon 4/4/22	Fri 5/13/22	9		\$3,790.00											
11		Prepare contracts, instructors documents (CPR & CRC) and Safety Plan	1.2.5, 1.2.6, 2.2.5, 1.2.5	16 days	Mon 4/4/22	Tue 4/26/22	9,35	Mile	\$3,200.00											
12		Insurance Contract	1.2.1	0.25 days	Tue 4/26/22	Tue 4/26/22	11	Mile	\$50.00											
13		Check-list of compelling provincial bylaw	1.2.2	1 day	Wed 4/27/22	Wed 4/27/22	12,11	Jonas,Mile	\$440.00											
14		Sign Contracts	1.2.6	11 days	Thu 4/28/22	Thu 5/12/22	13	Cyri	\$0.00											
15		Payment cycle schedule of locations	1.2.3	0.5 days	Fri 5/13/22	Fri 5/13/22	14	Mile	\$100.00											
16		Filling signed contracts	1.2.7	0 days	Fri 5/13/22	Fri 5/13/22	14,15	Mile	\$0.00											
17		HR Process	2.1, 2.1	78.13 days	Fri 1/14/22	Wed 5/4/22	1		\$26,051.20											
18		Write HR process and procedures	2.1, 2.2, 2.3, 2.1.1, 2.1.1.1, 2.1.1.1	7.13 days	Fri 1/14/22	Tue 1/25/22	1	Carla	\$0.00											
19		Revise HR Process	2.1.1, 2.2, 2.3	1 day	Wed 1/26/22	Wed 1/26/22	18	Tanner,Gab	\$760.00											
20		Approve document	2, 2.1, 2.2, 2.3	2 days	Thu 1/27/22	Fri 1/28/22	19	Cyri,Gab	\$960.00											
21		Presentation HR Process	2, 2.1, 2.2, 2.3	0 days	Fri 1/28/22	Fri 1/28/22	20		\$0.00											
22		Recruitment & Selection Plan	2.1.1.1	30 days	Mon 1/31/22	Fri 3/11/22	21	Tanner	\$15,584.00											
23		KSAO list per job requirement	2.1.1.1.3	1.5 days	Mon 1/31/22	Tue 2/1/22	21	Carla	\$0.00											
24		Create job postings	2.1.1.1.3, 2.1.1.1.3.1	0.25 days	Fri 2/4/22	Fri 2/4/22	23	Carla,Ela	\$64.00											
25		Approve job postings	2.1.1.1.3, 2.1.1.1.3.1	0.25 days	Mon 2/7/22	Mon 2/7/22	23	Cyri	\$0.00											
26		List of Channels to promote job posting	2.1.1.1.1, 2.1.1.1.2	0.5 days	Tue 2/1/22	Tue 2/1/22	23	Carla,Jonas	\$120.00											
27		Contact Co-op Departments	2.1.1.1.1	1 day	Wed 2/2/22	Wed 2/2/22	26	Carla	\$0.00											
28		Interview prospects	2.1.1.1.4	25 days	Thu 2/3/22	Wed 3/9/22	27	Tanner	\$7,000.00											
29		Select final candidates	2.1.1.1.4	2 days	Thu 3/10/22	Fri 3/11/22	28	Cyri	\$0.00											
30		List of final candidates	2.1.1.1.4.1	0 days	Fri 3/11/22	Fri 3/11/22	29	Carla	\$0.00											
31		Hiring & Onboarding Plan	2.2	38 days	Mon 3/14/22	Wed 5/4/22	30		\$8,747.20											
32		Send job offer letter	2.2.1	4 days	Mon 3/14/22	Thu 3/17/22	30	Mile	\$800.00											
33		Response of job offers	2.2.1.1	3 days	Fri 3/18/22	Tue 3/22/22	32	CandS	\$566.40											
34		Finalize instructors' locations	2.3, 2.3.1	1 day	Wed 3/23/22	Wed 3/23/22	33	Tanner	\$280.00											
35		List of instructors per location	1.2.5	0 days	Wed 3/23/22	Wed 3/23/22	34	Tanner	\$0.00											
36		Training Plan Instructors	2.2.2	30 days	Thu 3/24/22	Wed 5/4/22	35		\$7,100.80											
37		Video Content list	2.2.2.1	25 days	Thu 3/24/22	Wed 4/27/22		Ela	\$6,400.00											
38		Shadowing Schedule	2.2.2.2	0.5 days	Thu 4/28/22	Thu 4/28/22	37	Ela	\$128.00											
39		Survey	2.2.2.3	0.5 days	Thu 4/28/22	Thu 4/28/22	38	Ela	\$128.00											
40		Employees feedback	2.2.2.3	1 day	Fri 4/29/22	Fri 4/29/22	39	CandS	\$188.80											
41		Employee Report (Training completed)	2.2.2.4	1 day	Mon 5/2/22	Mon 5/2/22	40	Ela	\$256.00											
42		Add performance model in HRIS	2.3, 2.3.1, 2.3.2	2 days	Tue 5/3/22	Wed 5/4/22	41	Carla	\$0.00											
43		List of courses and descriptions	3	66.25 days	Fri 1/14/22	Tue 4/19/22	1		\$31,371.20											
44		Shortlist camps	3.1	2.88 days	Fri 1/14/22	Wed 1/19/22	1	Cyri	\$0.00											
45		Write content camps	3.1, 3.1.1	6 days	Thu 1/20/22	Fri 1/28/22	44	Tanner,Ela	\$3,216.00											
46		Approve content	3.1.1	5 days	Fri 1/28/22	Fri 2/4/22	45	Cyri	\$0.00											
47		Send content approved to marketing	3.1.1	0.88 days	Fri 2/4/22	Fri 2/4/22	46	Ela	\$224.00											
48		Supplies	3.2	52 days	Fri 2/4/22	Tue 4/19/22	46		\$27,931.20											



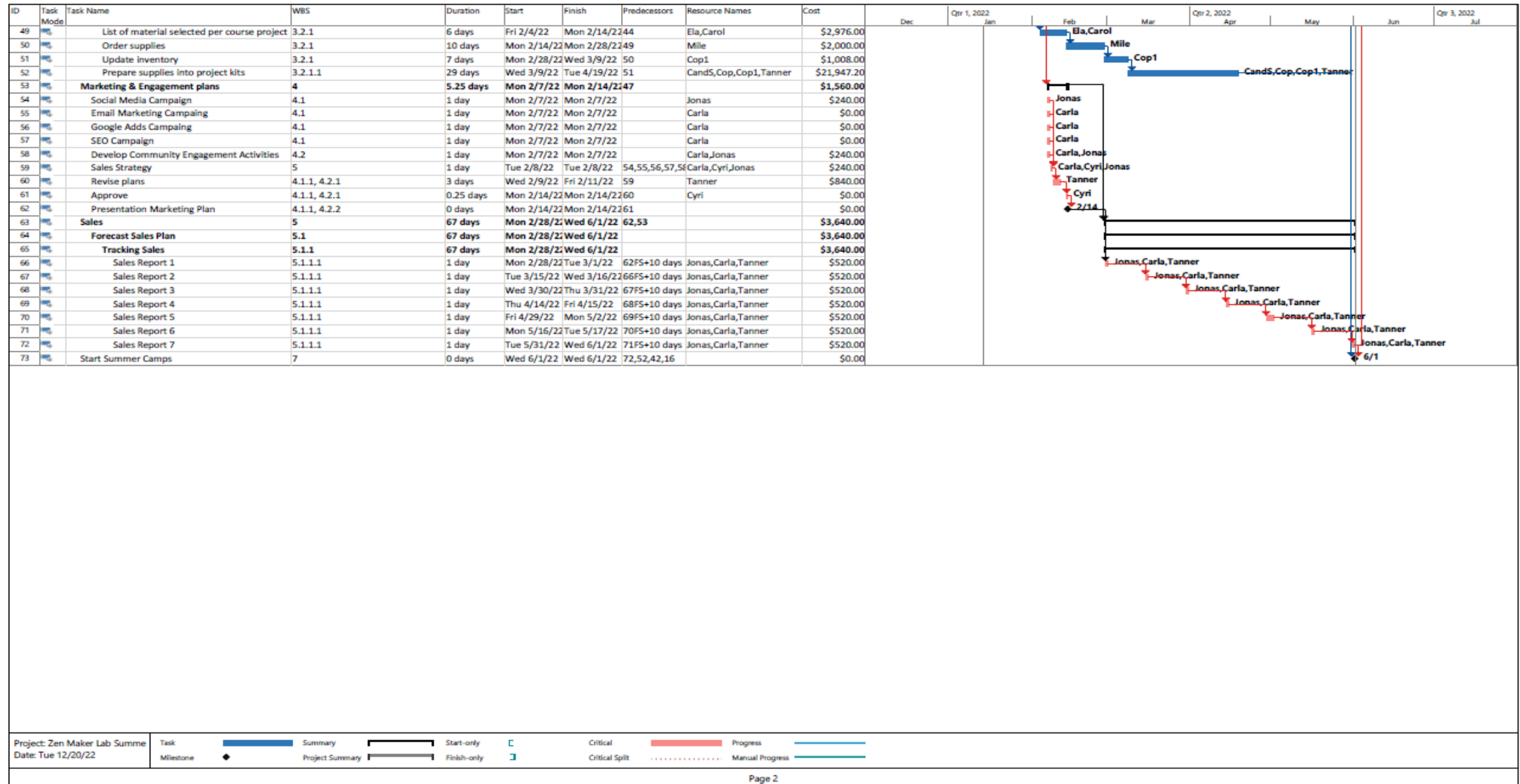
Project: Zen Maker Lab Summe  
Date: Tue 12/20/22

Task Summary  
Milestone Project Summary

Start-only  
Finish-only

Critical  
Critical Split

Progress  
Manual Progress



Note. View MS Projects. The view above allows to have a quick vision about the project in time. Source prepared by the author.

### **4.3.2 Schedule Control Procedure**

To control and measure the efficiency of the project schedule, weekly meetings will be held by the project manager to review progress, check status, and make adjustments when necessary. The project manager is responsible for preparing a status report to communicate progress and provide information about changes, including task owners among others.

The following table, Resource Status, shows the resources required for all work of the project and the other shows the remaining work. In the resources status table, Cyri is responsible for crucial tasks, such as the Marketing Plan and approvals of hirings. Tanner has additional responsibilities as an operations manager, including interviews, getting involved in content, and sourcing extra material or supplies necessary to deliver the summer camp. Meaning the project manager should be ready to follow closely to support Cyri and Tanner to fulfil their tasks on time to avoid any delay. Part of the results in the Network Diagram is this project does not have any lag, which is critical for all projects.

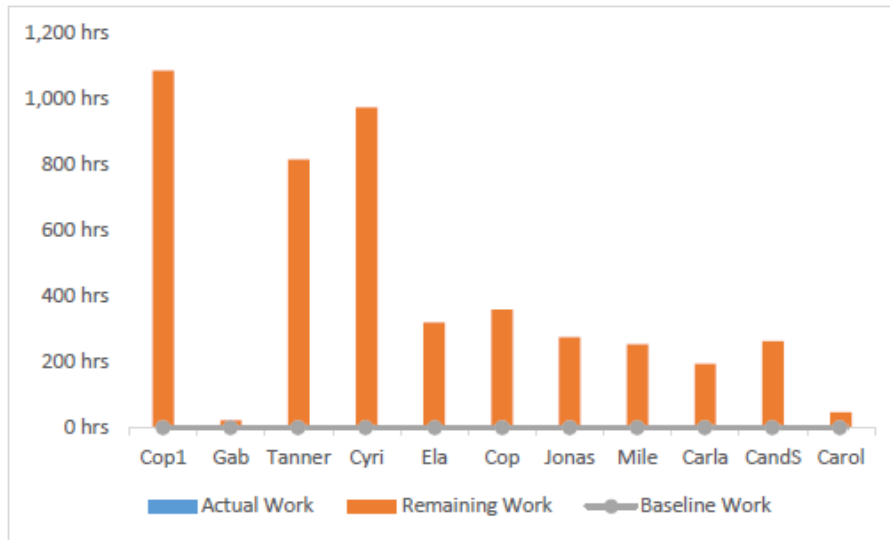
### **Figure 10**

*Resource Status*



RESOURCE STATS

Work status for all work resources.



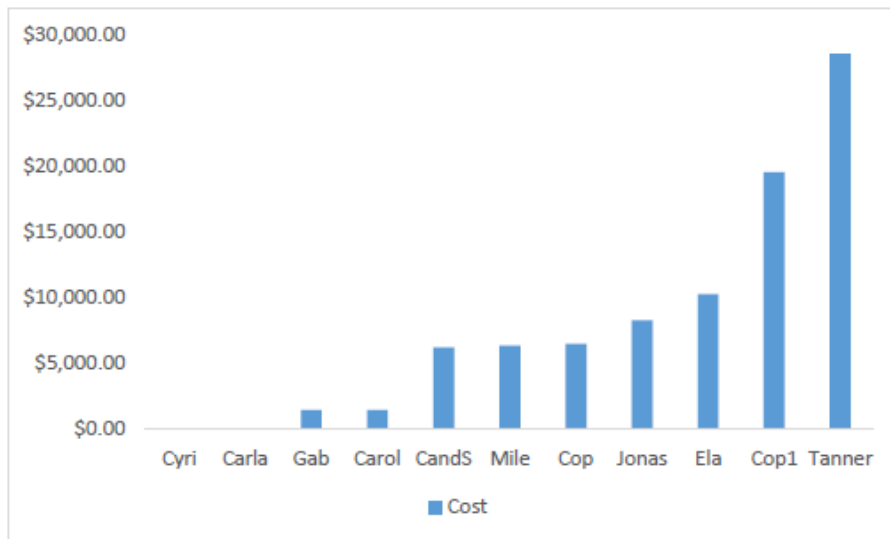
Note. Source by the author

Figure 11

Work done by all resources

WORK STATUS

% work done by all the work resources.



Note. Source by the author

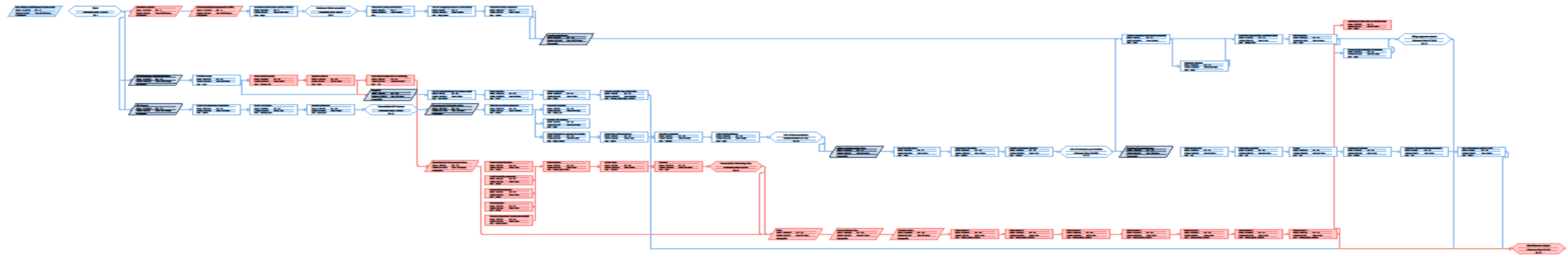
#### 4.3.2.1 Critical Path.

A Critical Path analysis allows one to identify the amount of total free time, lag or flexibility in the schedule while still meeting deadlines. The critical path can be generated manually, but the one described below was created using Microsoft Projects.

The diagram shows that ZML's project does not have any lag, and the critical path highlights the importance of data bases, locations and hiring process that start at the same time. **The critical path figure 13 that is below is originally in PDF, to be able to see it clearly please double-click on it. Then, at the bottom of the screen a PDF window will open. Click on that window to be able to navigate the graph. Please use the zoom tool that PDF provides. The screenshot was not used due to lacking readability.**

#### Figure 12

*ZML Summer Camp Critical Path*



Note. Network Diagram is a graphical representation of the logical relationships between the tasks schedule and dependencies. This image is originally in PDF, to be able to see it clearly please double click on it. Then, you will see at the bottom of your screen a PDF window opened. Click on that window to be able to navigate the graphic. Please use the zoom tool that PDF provides. Screenshot was not used due to lacking readability.

## 4.4 Project Cost Management

Cost management is a process that deals with the expenditure of money. It also considers future expenditures related to the use and keep up of completed products, services, or results. The project cost processes are plan cost management, estimate costs, determine budget, and control costs. In terms of costs, the ZML project's most expensive and sensitive items are hiring and training new instructors and the costs of new rentals.

### 4.4.1 Budget

The budget of the project includes the extra operation cost of the activities demanded to run the summer camps in Victoria, Calgary, Edmonton, and Vancouver in the Metro area. Also, it includes an estimate of 8% extra as contingency for the project. Items, costs, and frequency can be changed by the sponsor or his previous approval.

**Table 11**

*Project Costs – Zen Maker Lab Summer Camp expansion - Summer*

Budget				
Item	Resources (Description)	Costs (gross)		
		Unit price	Days	Total
All database Vancouver, Calgary, Edmonton & Victoria	1 pax core team	\$ 18	83.00	\$ 16,686
Marketing Plan (operations)	4 pax core team *AV	\$ 40	5.25	\$ 1,560
HR Process, Plan, Implementation, execution	6 pax core team *AV	\$ 39.25	78.13.	\$ 26,051

Content (summer camp)	4 pax core team	\$ 33.5	14.76	\$ 3,440
Locations Contracts (operations)	3 pax core team	\$ 28.5	28.75	\$ 3,790
Organization & ordering kits supplies	4 pax core team	\$ 26.2	59	\$ 27,931
New instructors	20	\$ 3,776.00	90	\$ 226,560
Project kits delivery	Miscellaneous	\$ 10,000.00	1	\$ 10,000
Rent of locations (Vancouver, Victoria, Calgary, Edmonton)	10 Loc	\$ 4,200.00	90	\$ 126,000
Insurance locations	10 Loc	\$ 1,000.00	3	\$ 30,000
CPR & CRC	20 New instructors	\$ 250.00	1	\$ 5000
Google Ads	per month	\$ 4,000.00	102.13	\$ 14,000
POP material	per month	\$ 800.00	90	\$ 2,400
Advertising (other campaigns)	per month	\$ 1,200.00	90	\$ 3,600
Events	2 months 2 x Loc	\$ 200.00	60	\$ 4,000
<b>Total</b>				<b>\$ 501,018</b>
	<b>Contingency 8 %</b>			<b>\$ 40,081</b>

Note. Source by the author

#### 4.4.1.1 Control Costs.

Each Friday, the sponsor, Cyri, the operations manager, Tanner, and the Project Manager, Carolina, will meet for thirty minutes to review the status of all aspects of the project and verify all budget costs related to human resources and locations due to their higher cost. Also, on these occasions, they will evaluate sales numbers and make new hires as appropriate.

**Table 12***Control Budget*

HR Budget					
Item	Resources (Description)	Days	Amount	Costs (gross) Frequency	Total
HR Process, Plan, Implementation, Execution	6 pax core team	78.13		1 1	\$ 26,051
<b>New instructors</b>	<b>20</b>		<b>\$ 3,776</b>	<b>3</b>	<b>\$ 226,560</b>
CPR & CRC	20		\$ 250	1	\$ 5,000
Subtotal					<b>\$ 333,051</b>
Locations Budget					
Item	Resources (Description)	Days	Costs (gross) Month	Frequency	Total
<b>Rent of locations (Vancouver, Victoria, Calgary, Edmonton)</b>	<b>10</b>		<b>\$ 4,200</b>	<b>3</b>	<b>\$ 126,000</b>
Insurance	10		\$ 1,000	3	\$ 30,000
Locations Contracts (operations)	3 pax core team	28.75	NA	1	\$ 3,790
Subtotal					<b>\$ 159,790</b>
Marketing Budget					
Item	Resources (Description)	Days	Costs (gross) Month	Frequency	Total
<b>All database Vancouver, Calgary, Edmonton &amp; Victoria</b>	<b>1 pax core team</b>	<b>83</b>	<b>NA</b>	<b>1</b>	<b>\$ 16,686</b>
Marketing Plan	3 pax core team	5.25	NA	1	\$ 1,560
Google Ads	Jan -Jul		\$ 2,000.00	7	\$ 14,000

POP material	per month	\$ 800.00	3	\$ 2,400
Advertising (other campaigns)	per month	\$ 1,200.00	3	\$ 3,600
Events	2 per month	\$ 200.00	10	\$ 4,000
Subtotal				<b>\$ 42,246</b>

Operations Budget					
Item	Resources (Description)	Days	Costs (gross)		
			Month	Frequency	Total
Organization & ordering kits supplies	4 pax core team	59	NA	1	<b>\$ 27,931</b>
Content	4 pax core team	14.76	NA	1	\$ 3,440
Project kits	Miscellaneous		\$ 10,000.00	1	\$ 10,000
Subtotal					<b>\$ 41,371</b>

Note. Source by source

**4.4.1.2 Estimate Activity Tools and Techniques – Three Point Estimating.**

The Three Point Estimation Technique helps to find the range of the activity duration. (Institute, Plan Risk Management, 2017) In this project, we will use the triangular distribution due to the lack of historical information.  $tE=(t0+tM+tP)/3$ .

**Table 13**

*Three Point Estimating (Time) – WBS*

Item	WBS	Task Name	Duration	tM	tO	tP	Result Days
1	1, 1.1, 1.1.1, 1.1.4, 1.1.1, 1.1.4	Locations search, List of locations approved by ZML	97.38 days	95	60	97	84.00
2	1.2	Location Contracts	28.75 days	28	20	97	48.33
3	2, 2.1, 2.2, 2.3, 2.1.1, 2.1.1.1, 2.1.1.1.3	HR Process (Write HR process and procedures, Revise HR Process, Approve document, Presentation HR Process	10.13	10	8	15	11.00
4	2.1.1.1	Recruitment & Selection Plan	30 days	30	20	60	36.67
5	2.2	Hiring & Onboarding Plan	38 days	35	30	60	41.67

6	3, 3.1, 3.1.1,	List of courses and descriptions Shortlist camps, write content camps, approve content, send content approved to marketing	13.25	12	8	20	13.33
7	3.2	Supplies	52 days	45	45	60	50.00
8	4, 4.1, 4.2, 5	Marketing & Engagement plans (social media, email marketing, Google Ads, SEO campaigns and Develop community engagement activities) Sales strategy	5.25 days	8	8	15	10.33
9	5, 5.1, 5.1.1	Sales, Forecast, Tracking sales	67 days	60	60	90	70.00

Note. Source by the author. The items were grouped based on report provided by MS Projects.

**Table 14**

*Three Point Estimating (Cost) – WBS*

Item	WBS	Task Name	Cost	tM	tO	tP	Ec
1	1, 1.1, 1.1.1, 1.1.4, 1.1.1, 1.1.4	Locations search, List of locations approved by ZML	\$22,206.00	\$22,200.00	\$28,800.00	\$37,440.00	\$29,480.00
2	1.2	Location Contracts	\$3,790.00	\$3,800.00	\$4,940.00	\$6,422.00	\$5,054.00
3	2, 2.1, 2.2, 2.3, 2.1.1, 2.1.1.1, 2.1.1.1.3	HR Process (Write HR process and procedures, Revise HR Process, Approve document, Presentation HR Process	\$1,720.00	\$1,800.00	\$2,340.00	\$3,042.00	\$2,394.00
4	2.1.1.1	Recruitment & Selection Plan	\$15,584.00	\$16,000.00	\$20,800.00	\$27,040.00	\$21,280.00
5	2.2	Hiring & Onboarding Plan	\$8,747.20	\$8,800.00	\$11,440.00	\$14,872.00	\$11,704.00



6	3, 3.1, 3.1.1,	List of courses and descriptions Shortlist camps, write content camps, approve content, send content approved to marketing	\$3,440.00	\$3,500.00	\$4,540.00	\$5,902.00	\$4,647.33
7	3.2	Supplies	\$27,931.20	\$28,000.00	\$36,400.00	\$47,320.00	\$37,240.00
8	4, 4.1, 4.2, 5	Marketing & Engagement plans (social media, email marketing, Google Ads, SEO campaigns and Develop community engagement activities) Sales strategy	\$1,560.00	\$1,600.00	\$2,080.00	\$2,704.00	\$2,128.00
9	5, 5.1, 5.1.1	Sales, Forecast, Tracking sales	\$3,640.00	\$3,700.00	\$4,810.00	\$6,253.00	\$4,921.00

Note. Source by the author

#### 4.5 Project Quality Management

Project Quality Management is based on the PMBok definition, “Project Quality Management includes the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements in order to meet stakeholders’ objectives.” (Project Management Institute, 2017) This area includes the following processes Plan Quality Management, Management Quality, and Control Quality.

As part of the Quality Management Process area, ZML will create a list of documents that will be part of the Project Management Plan.

**4.5.1 Quality Management Plan**

A quality management plan describes policies, procedures, and guidelines to achieve the project's quality objectives. The quality management plan may include, but is not limited to, quality standards of the project, quality objectives, project deliverables and processes, and other procedures that can be included.

Quality Management Plan	
1.	<p>Creation and implementation of the HR Process</p> <ul style="list-style-type: none"> <li>• As soon as the process is approved requires socialization.</li> <li>• Monitoring each phase of the process (Recruitment, Selecting, Hiring, Training, Onboarding -Induction, Orientation, Evaluation - and Offboarding)</li> <li>• Keep weekly communication with accounting and bring weekly reports prior to, during, and after the camps to the sponsor, Cyri Jones.</li> </ul>
2.	<p>Stakeholder Engagement &amp; Marketing Plan</p> <ul style="list-style-type: none"> <li>• Monitor the progress with the main stakeholders in the four cities (Schools and parents associations, Community centers, Universities, and its co-op departments). Each city has its own jurisdiction and particular requirements aspects that must be considered in each contract.</li> <li>• In terms of marketing, native advertising will be consistent across channels and Google campaigns. All social media and particularly Google will be tracked twice a week to achieve marketing objectives.</li> </ul>
3.	<p>Scope management</p> <ul style="list-style-type: none"> <li>• To ensure the advancement of the project, it is key to have scrum meetings and provide reports from the main areas, HR, sales, marketing, contracts, and content as a minimum. These types of meetings will address any issues and guarantee a close control.</li> </ul>

<p>4. Quality measurement</p> <ul style="list-style-type: none"> <li>• Minimum 8 kids per classroom, maximum 16</li> <li>• All engineers have to have personal projects</li> <li>• Spaces have to comply with the characteristics necessary to run the courses.</li> <li>• All courses require developing a project under DesignMakePlay method</li> </ul>
<p>5. Checklist</p> <ul style="list-style-type: none"> <li>• A checklist provides a method of ensuring that all tasks are completed, that time is used efficiently and that the goals of the project are met. Also, it allows the sponsor to closely check on resources and budget.</li> </ul>

**4.5.2 Project Documents**

Among the documents recommended to create are the following:

1. Data Bases

- Stakeholders: Universities, School Districts, Federal Organizations, STEAM groups, University Professors, and Public and Private Schools. Below are some models.

**Table 16**

*Database template*

<b>Data Base Title</b>	
<b>Date of creation</b>	MM/DD/YYYY
<b>Version</b>	N.

<b>Name</b>	<b>Last name</b>	<b>Job tittle</b>	<b>Phone</b>	<b>Cellphone</b>	<b>Email address</b>	<b>Organization</b>	<b>Mail address</b>	<b>Province</b>	<b>City</b>

Note. Source by the author

- Parents/ Clients: All information related to clients must be saved in HubSpot<sup>5</sup> and needs to be verified in Mailchimp<sup>6</sup>.
2. Lessons learned
- Meeting minutes

**Table 16**

*Minute Meeting Template*

<b>Minutes meeting - Marketing</b>				
<b>Date</b>	19-Mar-21	<b>Notes</b>		
	B R			
<b>Participants</b>	R D			
	Jonas Lopez Carla Vecino			
<b>Objective</b>	Objective			
Item	Task	Responsible	Deadline	
1				
2				

Note. Source by the author

### 4.5.3 Control Quality

To control the quality of the project, the Plan-Do-Check-Act principle<sup>7</sup> will be implemented:

---

<sup>5</sup> HubSpot: HubSpot is an American software company that develops and sells products for inbound marketing, sales, and customer service. [www.hubspot.com](http://www.hubspot.com)

<sup>6</sup> Mailchimp: Mailchimp is a software-as-a-service (SaaS) based email marketing service that allows users to create and send marketing campaigns. [www.mailchimp.com](http://www.mailchimp.com)

<sup>7</sup> It is an iterative design and management method used in business for the control and continuous improvement of processes and products. It is also known as the Deming circle/cycle/wheel, the Shewhart cycle, the control circle/cycle, or plan-do-study-act (PDSA). (Tague, 2005)

- Set the goals
- Plan the activities and quality requirements
- Do: implement the activities
- Check: check quality requirements
- Act: implement changes or adjustments

#### **4.5.3.1 Set the goals.**

The project management plan is based on the Work Breakdown Structure of the ZML project, such as for creating Databases of schools, churches, RECenters, and Community Centers; HR Process, Marketing Plan; Selection, Hiring, Recruitment and Onboarding of 20 new instructors; Finding ten (10) locations among Victoria, Edmonton, Calgary, and Metro Vancouver, and Training.

#### **4.5.3.2 Plan.**

At this stage, each work package has a particular requirement and demands a particular list of resources. The quality of requirements will facilitate the process where all relevant results or progress will be evaluated and communicated to the stakeholders.

#### **4.5.3.3 Do.**

At this point, all tools to monitor the progress and register the changes will be in place. It is very important to register change requests and control costs at the moment of executing the project. All stakeholders need to be engaged during this period.

#### **4.5.3.4 Check.**

At this stage, assessment and evaluation are the key components of a formal assessment. Here quality standards, peer review of results, sampling and measurements provide the information to evaluate the progress and see if the technical requirements are accomplished. Also, cost of execution will be evaluated versus Cost Baseline and Project Budget.

#### **4.5.3.5 Act.**

The goal is to implement suggestions to optimize the project and its procedures.

### **4.6 Project Resource Management**

Project Resource Management is the process of identifying, acquiring and managing the resources needed for the successful completion of a project. This helps ensure that the right resources are available to the project manager and in the right place at the right time. (Project Management Institute, 2017) The processes involved are the following: Plan Resource Management, Estimate Activity Resource, Acquire Resources, Develop Team, Manage Team, and Control Resources.

#### **4.6.1 Project Resources Management Plan**

The Project Resources Management Plan includes all types of resources, including Human Resources. However, based on the particularities of this project, it will focus on team resources. The definition on the PMBok sixth edition says, "To distinguish between human

resources and other resources, the term team resources is used to refer to human resources and the term physical resources is used to refer to other resources.” (Project Management Institute, pp.643. 2017)

#### **4.6.1.1 . RACI matrix or linear responsibility chart.**

The RACI (responsible, accountable, consult, and inform) matrix describes the participation of various roles in completing tasks or deliverables for a project or business process. (Project Management Institute, 2013)

1. Sponsor\*\* He will be responsible for approving or changing the scope, resources and budget.
2. Project Manager\*\* She will be responsible for keeping the project updated, and the team informed and on track. Also, she will deal with any changes to the documents and communicate any modifications to the sponsor.
3. Core Team\*\* The Operations Manager, Customer Experience Manager, and Digital Manager will work to accomplish the tasks outlined in the project.
4. The Trainer of trainers\*\* She will be in charge of training all new instructors for summer camps. Sprints will be organized at the end of the day for feedback or questions.
5. Accounting Manager\*\* She will bring all administrative support e.g. contracts and other documentation.
6. Cop1 & Cop2\*\* They will bring support to the core team and will accomplish the tasks assigned in the project.

**Table 17**

*Project RACI Chart*

Activity	Person										
	Sponsor	PM	Op. Manager	Cop1	Cop2	Customer Manager	Digital Manager	Training Manager	Accounting Manager	New Instructors	Vice President
Create databases		A		R							
Develop marketing plan	A										R
Create HR process	A	R									
Short list of camps			A					R			
Write content of camps for MKT	A		A					R			
Contact locations			A			R					
Shortlist locations	A					R					
Contract locations	A								R		
Contract Instructors	A								R		



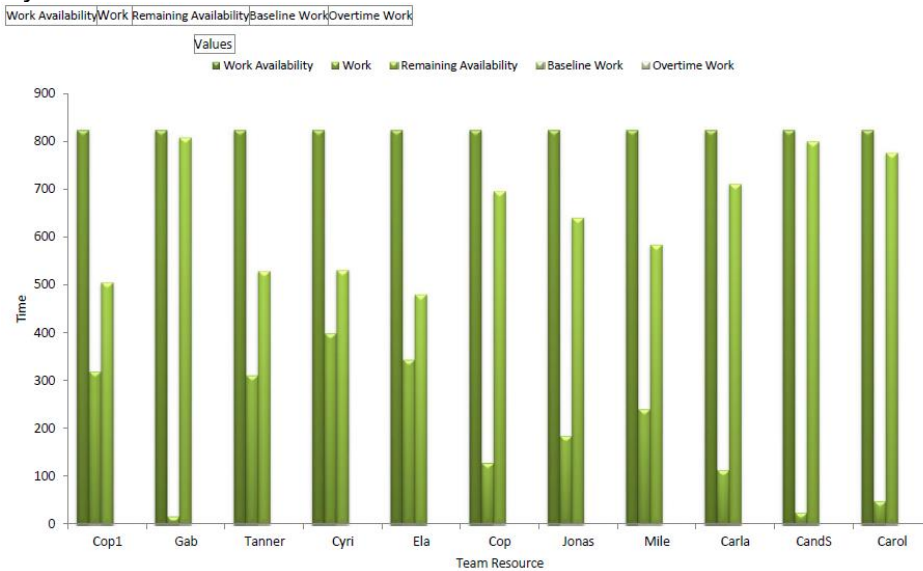


Run Google Ads					R					
Run Social Media campaigns	A				A	R				
Organize Events	A		A		R					
Produce Promo material	A		A		R					

Note. **Key:** R – Responsible for completing work. A – Accountable for ensuring task completion/sign off. C – Consult before decisions are made. I – Inform when an action/decision has been made. Source by A Guide to the Project Management Body of Knowledge PMBOK Guide Sixth Edition.

Figure 13

Workability of the main resources



Note. Source prepared by the author

#### **4.6.2 Environment in which the project operates**

The nature of ZML as a start up requires organizing and revising the Enterprise Environment Factors (EEFs) and Organizational Process Assets (OPAs). The internal and external EEFs are defined by PMBOK as follows: “EEFs originate from the environment outside and inside of the enterprise. EEFs may have an impact at the organizational, portfolio, program, or project level.” (Project Management Institute, 2017) The internal EEFs are related to organizational culture, vision, mission, authority, employee expertise, skills, experience and competencies, etc. The external EEFs are related to facility locations and resources, information technology software, resource team availability such as providers and subcontractors, competitors, politics, people’s perceptions, and legal restrictions, among other conditions. The OPAs are more related to process policies and procedures. (Project Management Institute, 2017)

Consequently, the creation of a Human Resources Procedure where job descriptions, hiring, selection, and training processes are outlined is critical in this project.

##### **4.6.2.1 Job description of seasonal staff – Instructors.**

The expected number of co-op students to be hired is ten (10). They will be working at the different locations in Victoria, Calgary, Edmonton, and Metro Vancouver. Below are the tables with the job description sent to the co-op student departments of engineering and design from the University of Victoria, Alberta University, University of British Columbia, Simon Fraser University, Langara College, British Columbia Institute of Technology, and Douglas College. Also, it will display the whole process for seasonal employees.

**Figure 14***Job Description 1***Designer – Projects and Teaching**

NOC 4021 – [Statistics Canada, NOC, Median salary \\$80,212](#)

**Objective:** Hire 4 designer students to work in summer to teach in camps and support ZML and ZD clients.

**Requirements from Management:**

1. They should be ready to start on May 1st to prepare and work on the production of educational material and projects.
2. Students who are on 2 year at the university or college
3. Contact co-op departments
4. Previous experience teaching through volunteering activities
5. Additional documentation: GPA, Portfolio
6. Abilities and qualities
  - Leadership
  - Creativity
  - Instructional capacity
  - Good time management
  - Communications (Vocal, visual, written)
  - Adaptability
  - Personal projects
  - Hobbies

**Skills:**

1. Digital design in different areas
2. Knowledge in
  - Programming /Web design: Java, C, HTML, and Unity.
  - Digital Illustration: Photoshop, Illustrator, Procreator, InDesign, Adobe platform
  - Video Editing: After Effects, Premiere, Motion Graphics, Light Room, SolidWorks
  - Digital Modelling: SketchUp, Solid Works, Maya, AutoCAD, MaxonCinema 4

**Preference for people leaving at Richmond, Langley, Coquitlam, Delta, Squamish, and specially in North Vancouver**

- Reason: To work at new locations and avoid commuting to decrease the possibilities of Covid-19 contagion. Work in site
- Legal requirements: Canadian or Permanent Resident
  - Reason: Company is applying for a government grants

**Term:**

1. Temporarily – Seasonal – Summer

Diversity and inclusion are an integral part of Zan Maker Lab. Our multi-cultural team enriches the work environment and teaching experience. We are committed to create a respectful and diverse workforce. We are proud to be an equity employer.

**Main duties:**

1. Teaching kids in ages 8 - 16 years old, elaborate/create or improve content and make kits projects base on their area of interest. Also, provide solutions for the company and clients in certain projects.

**Levels:**

- Level 2 Graphic designers and illustrators (NOC 5241 – [Statistics Canada, NOC, Median Salary \\$56,311](#))
- Level 3 Computer programmer and interactive media (NOC 2174 – [Statistics Canada, NOC, Median Salary \\$87,595](#))

**Posting for universities and colleges:**

Are you looking for an unforgettable experience as an instructor in STEAM and at the same time have the opportunity to work on projects this summer? If the answer is yes, send us your resume we would like to have you in our team as a Graphic designer and illustrator developing project base content in STEAM for 8- to 16-year-old kids. Also, there is an opportunity to work on internal projects and clients. You will have the opportunity to work at the maker space and have access to incredible tools, you bring your creativity to the next level.

**Job Specification model: 8 relevant KSAOS:**

1. Knowledge: Programming / Web design: Java, C, HTML, CSS, Unity, Python, Axure, Figma. Digital Illustration: Photoshop, Illustrator, InDesign, Adobe platform. Video Editing: After Effects, Premiere, Motion Graphics
  - Digital Modelling: SketchUp, Solid Works, Maya, Maxon Cinema 4
2. Skills: Active listening, problem solving, visual and verbal communication, leadership, time management, innovative, and creative.
3. Abilities: Learning ability, numerical ability, spatial and form perception, finger dexterity, adaptability, general perception.
4. Other: Curious, adaptable and self-directed.

Note. Source prepared by the author

**Figure 15**

*Job Description 2*

## Engineer – Projects and Teaching

NOC 4021 – [Statistics Canada, NOC, Median salary \\$80,212](#)

**Objective:** Hire 20 engineer students to work in summer camps.

**Requirements from Management:**

1. They should be ready to start on May 1st to prepare and work on the production of educational material and projects.
2. Students who are on 2 year at the university or college
3. They are looking for co-op opportunity
4. Previous experience teaching through volunteering activities
5. Additional documentation: GPA
  - Abilities and qualities
  - Leadership
  - Instructional capacity
  - Good time management
  - Communications (Vocal)
  - Personal projects
  - Hobbies

**Skills:**

1. Engineers in different areas
2. Knowledge in Autocad Design software and 3D design
3. PCBs
4. Arduino
5. Coding (Python, C++, JSS)

**Preference for people leaving at Richmond, Langley, Coquitlam, Delta, Squamish, North Vancouver, Victoria, Edmonton, Calgary.**

- Reason: To work at new locations
- Legal requirements: Canadian or Permanent Resident
- Reason: Company is applying for a government grants

**Term:**

1. Temporarily – Seasonal – Summer; possibilities to extend to fall

**Main duties:**

1. Teaching kids in ages 8 - 16 years old, elaborate/create or improve content and make kits projects base on their area of interest.

**Posting for universities and colleges:**

Are you looking for an unforgettable experience as an instructor in STEAM and at the same time have the opportunity to work on your favorite projects this summer? If the answer is yes, send us your resume we would like to have you in our team of engineers developing project base content and kits in STEAM for 8- to 16-year-old kids. During the week you will have the opportunity to work at the maker space and have access to incredible tools, you bring your creativity.

**Job Specification model: 8 relevant KSAOS:**

1. Knowledge: Programming / Web design: Java, C, HTML, CSS, Unity, Python, Axure, Figma. Digital Illustration: Photoshop, Illustrator, InDesign, Adobe platform. Video Editing: After Effects, Premiere, Motion Graphics
  - Digital Modelling: SketchUp, Solid Works, Maya, Maxon Cinema 4
2. Skills: Active listening, problem solving, visual and verbal communication, leadership, time management, innovative, and creative.
3. Abilities: Learning ability, numerical ability, spatial and form perception, finger dexterity, adaptability, general perception.
4. Other: Curious, adaptable and self-directed.

Note. Source prepared by the author

### 4.6.2.2 HR Process.

Figure 16

HR Process – Selection and Recruitment

## Employee Life Cycle

### 1. Identification of the need

- ✓ 1.1 Task description
- ✓ 1.2 Team assigned
- ✓ 1.3 Goals
- ✓ 1.4 When the resource is needed it

### 2. Recruitment plan

- ✓ 2.1 Identify and define the need
- ✓ 2.2. Begin recruitment
- ✓ 2.3 Define the expertise level
- ✓ 2.4. Decide the level of involment
- ✓ 2.5 Define access to information
- ✓ 2.6 How and when publicize the new position
  - ✓ 2.6.1 Decide channels of distribution of the job posting
  - ✓ 2.6.2 Universities - Co-op departments
  - ✓ 2.6.3 Social Media (has to be announced on job posting so candi-  
date knows that their social media will be chekced

## 2.7 Job description

- ✓ 2.7.1 Describe duties
- ✓ 2.7.1 Salary
- ✓ 2.7.2 Benefits
- ✓ 2.7.3 Write job posting
  - ✓ 2.7.3.1 Approve of job posting

## 2.8. Selection

- ✓ 2.8.1 Establish criteria for screening candidates
- ✓ 2.8.2 Revise package sent by co-op office
- ✓ 2.8.3 Select resumes
- ✓ 2.8.4 Collect resumes
- ✓ 2.8.5 Decide how and who will be involved in the interview process
  - ✓ 2.8.5.1 Who will call candidates
  - ✓ 2.8.5.2 Who will email to candidates
  - ✓ 2.8.5.3 Determine who will conduct the interview
    - ✓ 2.8.5.3.1 Keep record of notes and questions
    - ✓ 2.8.5.3.2 Save interview schedule
- ✓ 2.8.6 Select Candidate
  - ✓ 2.8.6.1 Background check
  - ✓ 2.8.6.2 Criminal check background
  - ✓ 2.8.6.3 Check social media accounts - Just if it was announced on the job posting



## 2.9 Hiring

- ✓ 2.9.1 Writing job offert
- ✓ 2.9.2 Approve job offert
- ✓ 2.9.3 Send job offer
  - ✓ 2.9.3.1 If Coop departments - to get approval
  - ✓ 2.9.3.2 If other candidates - send directly
- ✓ 2.9.4 Fill out TD1 Federal
- ✓ 2.9.5 Fill out TD1 Provincial
- ✓ 2.9.6 Direct Deposit form
- ✓ 2.9.7 Prove of vaccination
- ✓ 2.9.8 Send letter of roles and responsibilities
- ✓ 2.9.9 Set up date for training

## 2.10 Onboarding

- ✓ **2.10.1 Before arriving**
  - ✓ 2.10.1.1 Send a welcome email with all policies documents and schedule during the first day. Before their arrival, email and work station will be determined
- ✓ **2.10.2 First day**
  - ✓ 2.10.2.1 At the arrival of the new hiring HR person will welcome them, give a tour and then introduce to the team. At the end the new hired will meet with their manager.
  - ✓ 2.10.2.2 Meeting with the manager/supervisor will include the outline of the responsibilities and tasks of the role and expectations. Highlight schedule, team members and should include training dates, resources and solve any questions from the hire.
    - ✓ 2.10.2.2.1 Revise the list of short goals and dates of assessment (First month, 3rd month, 6 month and first year)
    - ✓ 2.10.2.2.2 Revise the list of long term goal and dates of assessment (First month, 3rd month, 6 month and first year)
    - ✓ 2.10.2.2.3 Assign a colleague in the team who will support the person during their first two weeks
  - ✓ 2.10.2.3 Assigned a meeting one on one with leads/supervisors/coordinators/directors of each area in the company. 30 minutes each
- ✓ **2.10.3 First week**
  - ✓ 2.10.3.1 Meeting with the supervisor/coordinator/lead/director to answer questions, collect feedback and make recommendations.
    - ✓ 2.10.3.1.1 Revise the understanding of goals to achieve and set a date for assessment
- ✓ **2.10.4 First month**
  - ✓ 2.10.4.1 Check with the training in a brief meeting
  - ✓ 2.10.4.2 Send survey to evaluate goals and collect feed back related to the area of interest and other intersection areas

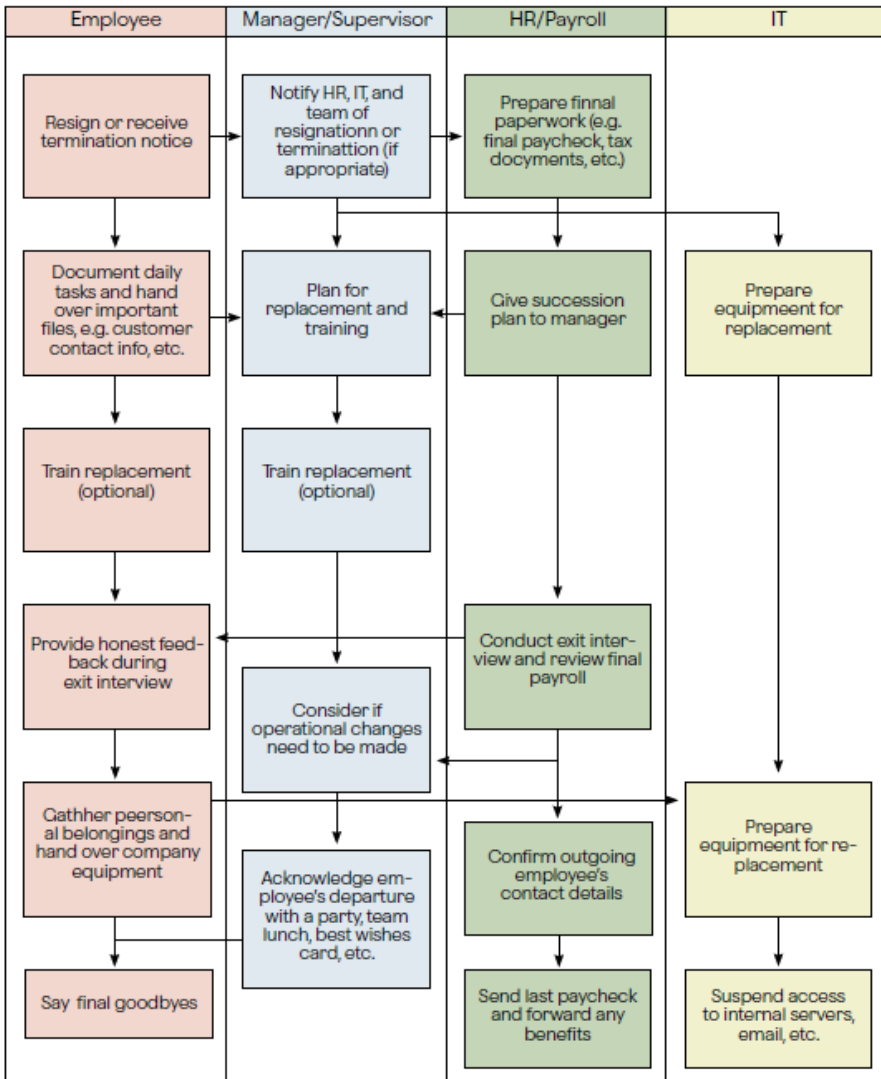
- ☑ **2.10.5 Third month - End of probation period**
  - ☑ 2.10.5.1 Discussion with the supervisor before the probation time ends
  - ☑ 2.10.5.2 HR has to meet with the employee to inform about their performance 45 days into the new hire's employment.
- ☑ **2.10.6 Remote onboarding**
  - ☑ 2.10.6.1 Discussion with the supervisor before the probation time ends
  - ☑ 2.10.6.2 Additional training with IT
  - ☑ 2.10.6.3 Send introductory videos that the new hire can access at any time

Note. Source prepared by the author

## Figure 17

*Offboarding Process*

## Offboarding Process



Note. Source prepared by the author

### 4.6.2.3 Training.

The ZML Summer Camps start in June and end the first week of September, 13 weeks in total. During this period, new instructors are hired to deliver courses in STEAM and work intensely with children and youth from all ages and capacities. The main goal for the new instructors is to engage their students in activities that involve design, make, and play six hours

per day in all types of subjects: robotics, coding, design, mechanics, and arts. Below is the resource calendar of the new instructors who are expected to start their training in May and their activities.

**Table 19**

*Zen Maker Lab Summer Camp Resource Calendar New Instructors*

Zen Maker Lab Summer Camp Resource Calendar for New Instructors									
Activity	Start Date	End Date	Hours	Responsible	Summer Camp				Total
					June	July	Aug	Sept	
Onboarding process	April wk 4	May wk2	45	Tanner	160	160	160	40	565
Visit ZML company & Introduction Who is who	9-May	9-May	3	Jonas, Tanner or Cyri	160	160	160	40	523
Training Face-to-face & Online STEAM	10-May	13-May	32	Ela	160	160	160	40	552
CPR Training	16-May	17-May	16	Provider	160	160	160	40	536
Training in creation lab	18-May	20-May	24	John	160	160	160	40	544
Teaching training	23-May	25-May	24	Ela & Carol	160	160	160	40	544
Soft skills, strong skills	May 26 2020	27-May	16	Ela	160	160	160	40	536
Set up equipment	30-May	3-Jun	40	Tanner	160	160	160	40	560

and kits for camps									
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Note. Source prepared by the author

#### 4.6.2.4 Effectively Leading and training virtual teams.

Being in several locations requires effectively coordinating teams remotely. Coordination and awareness about time zones are very important when training the new instructors. To optimize resources without sacrificing quality training, it is important to establish a clear agenda where each item helps to accomplish the training objectives. Also, after each meeting, the trainer responsible should submit meeting notes and send the presentation or give access to the material to the new instructors.

Important items to consider: 1. Establishing accountability by setting concise goals and priorities, and occasionally checking-in on progress. This will help to hold each member accountable for the tasks they have been assigned. 2. Celebrating accomplishments by providing positive feedback and recognition to team members as a source of motivation. 3. At the end of the meeting, ask for feedback and questions.

All meetings during the training must have the following items in the document as a minimum: Meeting title, Time, Date, Location, Lead, Note taker, Attendee names, Agenda, Actions from this meeting with description and owner, Next meeting if there is another meeting, and Conclusions or pending items.

### 4.7 Project Communication Management

The project communication management plan addresses the information needs of the project and its stakeholders through the development of artefacts and the implementation of activities designed to achieve effective information exchange. This project consists of two parts: one, ensuring effective communication with stakeholders; and two, carrying out necessary activities to implement the strategy. (Project Management Institute, 2017) The processes are Plan Communication Management, Manage Communications, and Monitor Communications.

**4.7.1 Plan Communications Management**

The Communication Plan Management includes the analysis of information provided by the stakeholders about the project needs. The analysis of the information and its value will facilitate a stakeholder engagement plan, possible ways of communication and channels, and stakeholder responsibility based on internal and external needs. (Project Management Institute, 2017).

**4.7.1.1 Internal Stakeholders.**

It is the internal team who are part of the Zen Maker Lab organization chart.

**Table 19**

*Internal Communication Structure*

Item	Stakeholder	Way to communicate	Method	Type
1	PM	Internal/ External	Interactive, push and pull	Mostly interpersonal, in small groups, emails, reports, surveys, meetings, and presentations

2	Sponsor	Internal/External	Interactive, push and pull	Mostly interpersonal, in small groups, emails, reports, surveys, meetings, and presentations
3	Operations Manager	Internal/External	Interactive, push and pull	Mostly interpersonal, in small groups, emails, reports, surveys, meetings, and presentations
4	Customer Manager	Internal/External	Interactive, push and pull	Mostly interpersonal, in small groups, emails, reports, surveys, meetings, and presentations
5	Training & Development Manager	Internal/External	Interactive, push and pull	Mostly interpersonal, in small groups, emails, reports, surveys, meetings, and presentations
6	Curriculum Development Manager	Internal/External	Interactive, push and pull	Mostly interpersonal, in small groups, emails, reports, surveys, meetings, and presentations
7	Digital Manager	Internal	Interactive	Small groups, emails, messaging, phone

				calls
8	Accounting Manager	Internal	Feedback response	Small groups, emails, messaging, phone calls
9	Vice president and Product Developer	Internal/ External	Interactive, push and pull	Mostly interpersonal, in small groups, emails, reports, surveys, meetings, and presentations
10	Instructors	External	Interactive, push and pull	Mostly interpersonal, in small groups, emails, reports, surveys, meetings, and presentations

Note. Source prepared by the author

**4.7.1.2 External stakeholders.**

The external stakeholders include all that interact with ZML.

**Table 20**

*External Stakeholders*

<b>N</b>	<b>Stakeholders</b>	<b>Communication Method</b>	<b>Type of Communication</b>
1	Schools, RECenters, Community Centers	Interactive, push and pull	Interpersonal, small groups, and emails, notice boards, annual reports, web, surveys, meetings, and presentations



2	Universities – Co-op departments	Interactive, push and pull	Interpersonal, small groups, and emails, notice boards, annual reports, web, surveys, meetings, and presentations
3	Government	Interactive	Interpersonal, small group communication, networks, press releases, annual reports, emails, briefings, consultation
6	Parents	Feedback response	Interpersonal, small group communication, networks, emails
7	PACs	Interactive, push and pull	Interpersonal, small group communication, networks, press releases, annual reports, emails, briefings, consultation, focus groups, events, phone calls
8	Population living around the locations	Interactive, push and pull	Interpersonal, small group communication, networks, press releases, annual reports, emails, briefings, consultation, focus groups, events, phone calls

Note. Source prepared by the author

#### **4.7.2 Management Communications**

The communication management stage of a project requires you to identify the audiences, time, channels, and frequency where the message is connected to the goal of the

project. To appropriately manage the information, all documents will be stored and filed in the ZML One Drive under the Summer Camp folder. Inside the folder, a file for Data, Contract Locations, and Graphic materials among others will be available. All personal documents of new instructors and the core team will be stored on the BambooHR system. The only documents that will be saved on the One Drive are the HR procedure document and surveys. Minutes of meetings, progress reports, and financial reports will be saved in the corresponding folders. The nomenclature of the documents would be Name of the document\_MM-DD-YY\_Version1. The final version should say, Version Final.

Any event, marketing material, or promotional material should follow ZML guidelines to avoid misunderstanding when introducing the brand, services, or products to any stakeholder.

#### 4.7.2.1 Communication Matrix.

It is essential for the project to maintain fluid and constant communication with all stakeholders involved in the project. The Communication Matrix below identifies the responsibility of the Project team and stakeholders. Also, it specifies the type, format, and frequency of the information.

**Table 21**

*Communication Matrix ZML Summer Camps expansion*

Internal Communication						
N	Details	Responsible	When	Media of Communication	Who to inform	Evidence of Communication
1	Meetings	Sponsor	Weekly	Face-to-face & Microsoft Teams	All members	<i>Minutes meeting</i>
2	Progress	PM	Weekly	Face-to-face &	Sponsor,	<i>Sales, Budget,</i>

	report			Microsoft Teams	Operations Manager	<i>Database, locations, material, &amp; HR</i>
3	Milestone report	PM	Monthly	Face-to-face & Microsoft Teams	Sponsor, Operations Manager	<i>Sales, Budget, Database, locations, material, &amp; HR</i>
4	Content	Development & Training Manager	Bi-weekly	Face-to-face & Microsoft teams or email	Sponsor, Operations Manager	<i>Minutes meetings, Documentation</i>
5	Training	Operations Manager, Development & Training Manager	Bi-weekly	Face-to-face Microsoft Teams	Sponsor, Operations Manager, Development & Training Manager	<i>Minutes meetings And marketing material. (Includes videos, photos and any support material)</i>
6	Databases	Cop 1	Weekly	Face-to-face, Microsoft teams, emails	Sponsor, Operations Manager, Customer Service Manager	<i>Minutes meetings Data Base Documentation</i>
7	Selection, hiring & onboarding process	Operations Manager, Sponsor, Customer Manager	Bi-weekly	Face-to-face, Microsoft teams, emails	Sponsor, Operations Manager	<i>Minutes meetings, documentation, progress reports, interview question, videos and any support material.</i>
<b>External Communications</b>						
Item	Details	Responsible	When	Media of Communication	Who to inform	Evidence of Communication
1	Schools, Community Centers, Churches & RECenters	Customer Manager	Bi-weekly	Face-to-face Microsoft teams Emails checking under HubSpot, Website form inquiries, Surveys, Social media messages, phone calls	Sponsor, Operations Manager	Minutes meetings, Documentation, progress report, Hubspot reports
2	Contracts Locations	Accounting Manager	Weekly	Email, face-to-face or Microsoft	Operations Manager,	Progress report

				teams	Sponsor	
3	Contracts new instructors	Accounting Manager	Bi-weekly	Email, face-to-face or Microsoft Teams	Sponsor, Operations Manager	Progress report
4	Reports cop-op departments	Customer Manager	Bi-weekly	Email (Support under Hubspot), Face-to-face, Microsoft Teams	Operations Manager	Progress Report

Note. Source prepared by the author based on *A Guide to the Project Management Body of Knowledge PMBOK Guide Sixth Edition*

### **4.7.3 Monitor Communications**

To track the effect of communication with internal and external stakeholders, monthly reports, surveys on Google or Microsoft forms to facilitate tracking and reports, and meeting minutes will be used. Meeting reports will be elaborated on, highlighting the most relevant information that will be presented to the sponsor.

#### **4.7.3.1 Comply with legal privacy.**

A variety of activities related to ZML's external stakeholder relations is recommended to be conducted in order to increase the data base. In accordance with The Canadian Consumer Privacy Protection Act (CPPA), it is necessary to obtain consent from stakeholders when using their information (Hochedez, 2022). This legislation aims to give people control over their own information, and ZML will comply with transparency policies adjusted to fit the federal legislation in Canada as well as PIPEDA which also states "rules for how private-sector organizations collect, use, and disclose personal information" (Office of the Private Commissioner of Canada, 2018).

## **4.8 Project Risk Management**

The risk management process for a project involves planning, identifying, and analyzing risks, planning how to respond to those risks, implementing the response plan, and monitoring the progress of the project. One objective of risk management is to increase the likelihood that positive events will occur and decrease the likelihood of negative events occurring in order to optimize the chances that a project will succeed. (Project Management Institute, 2017) The Project Risk Management Procedures are Plan Risk Management, Identify Risks, Perform Qualitative Risk Analysis, Plan Risk Response, Implement Risk Responses, and Monitor Risks.

#### **4.8.1 Project Plan Risk Management**

It is important to plan the risk management activities for a project. This ensures the appropriate level and type of contingency planning is in place based on the risks associated with the project as well as its impact on stakeholders. The process of planning risk management activities can be performed at any point during a project's life cycle. (Institute, Plan Risk Management, 2017)

##### **4.8.1.1 Environmental Factors.**

ZML sees the opportunity to grow in markets surrounding North Vancouver and has decided to enter the market in Victoria, Edmonton, and Calgary. For success, it is necessary to promote the camps, hire new instructors and train them, and find new locations for campsites. Part of the outcome of this project is to get at least two locations per city to deliver camps in those new markets. Regarding content, which is the most valuable asset of the company, ZML expects to introduce STEAM camps for children and youth from different capacities by implementing the Design, Make, and Play curriculum. The advantages of gaining skills in STEAM are many, including becoming digitally literate. The program offers an unforgettable

experience that combines soft skills with hard skills in topics such as robotics, design, coding, math, mechanics, critical thinking, and more.

The Covid-19 virus has affected everyone in so many ways. Families have had difficult financial times, and deciding whether or not to invest in extra activities for their children is part of their list. STEAM camps face concerns about children spending too much time on screens and not enough time getting exercise. For ZML, the biggest challenge based on its experience is finding instructors who are passionate about working with children and can deliver the classes in an amusing way. Also, locations where campers will be needed to be accessible where most families live, so that it is easy for parents to drive children to attend the camp.

#### **4.8.1.2 Risk strategy.**

ZML will operate in different locations such as schools, community centers, RECenters, or churches. Each of these has specific demands around delivering courses in their buildings. The provincial government and associations have specific regulations that can impact the delivery of the camps. For this reason, monitoring media and federal, provincial, and local government websites regarding Covid 19 regulations and any notices related to informal education is crucial for ZML. Cyri Jones will be the one who will make any decisions in case any adverse circumstances appear. Also, all check lists and compiling listing bylaws are an essential input at the moment of any decision-making process.

ZML's stakeholders for this project include universities and colleges. These institutions will help to advertise and preselect the best candidates based on the ZML job descriptions and requirements. One risk for camps running outside of Vancouver is hiring and training instructors remotely. Additional risks exist with managing rent of space directly with each institution and

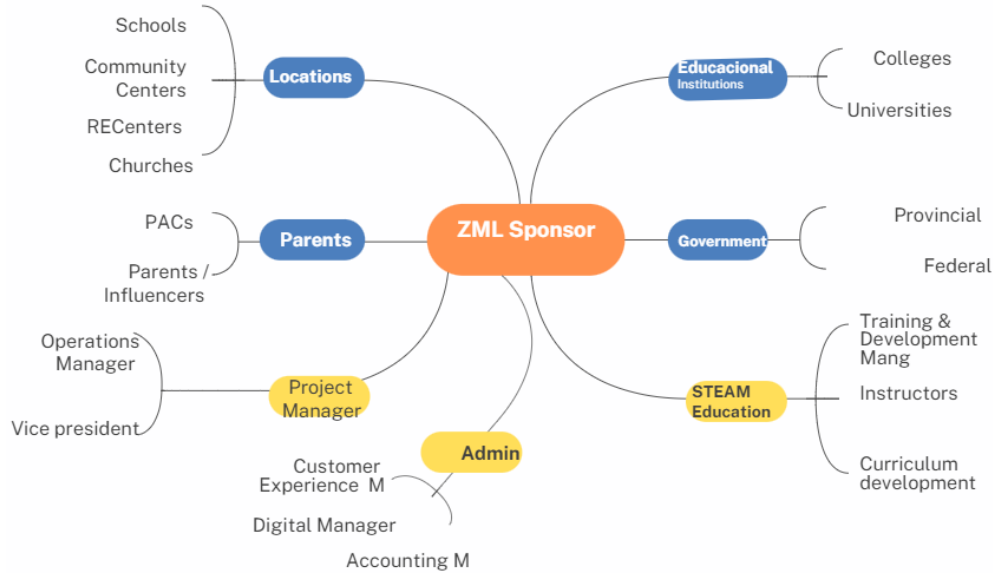
contracting locations remotely. Measures such as video calls, photos, and reports will be essential in addressing such concerns.

Qualitative risk analysis is the process of prioritizing individual project risks for further analysis or action by assessing their probability of occurrence and impacts. Risks that are likely to occur and have a high impact on the project will be given priority. (Project Management Institute, 2017)

After running the camps in 2021, it became evident that it was necessary to know the topics to teach in advance by the earliest possible date. Also, reaching out to universities and other institutions in March to post job postings to hire the best candidates who may be interesting in working at Zen in summer; and contacting community centers in the second week of the same month to see if they are willing to advertise and run STEAM programs in cooperation. Also, launch early summer campaigns to increase awareness in the areas of interest.

### **Figure 18**

*Project Organization – ZML Summer Camps expansion*



Note. Source prepared by the author

**4.8.1.3 Risk Categories - Risk breakdown structure.**

“A risk breakdown structure (RBS) is a hierarchical representation of potential sources of risk. An RBS helps the project team consider the full range of sources from which individual project risks may arise.” (Project Management Institute, 2017)

**Table 22**

*Risk Break Down Structure*

RBS Level 0	RBS Level 1	RBS Level 2	RBS Level 3
Sources of risk	1. Financial Risks	1.1 High location prices	1.1.1 Run out of budget
		1.2 Getting inadequate locations	1.2.1 Increase logistics
			1.2.2 Faraway from urban areas



			1.2.3 Lack of open space
		1.3 Having extra charges	1.3.1 Increase budget
	2. HR (Hiring) Risks	2.1 Having selection difficulties	2.1.1 Lack of hiring options
		2.2 Missing hiring co-op cycle	
		2.3 Hiring difficulties	2.3.1 Candidates withdraw the job offer
			2.3.2 Candidates don't pass CPR or CRC
		2.4 Having training difficulties	
		2.5 Onboarding delays	2.5.1 Difficulties collecting documentation
	3. Government Risks	3.1 Changing regulations	
	4. Technical risk	4.1 Lack of clarity of content training	
		4.2 Delay of summer camp content	
		4.3 Marketing promotion delays	4.3.1 Technical issues to run social media campaigns
		4.4 Wrong sales forecast	4.4.1 Not having enough registrations

Note. Source prepared by the author

**Table 23**

*Risk Register*

RBS CODE	RISK	OWNER OF THE RISK	CAUSE/ REASON	TRIGGER	CONSEQUENCE/ EFFECT	PROBABILITY	IMPACT	LEVEL OF RISK	RISK RESPONSE STRATEGY	COST
1.1	High rent location prices	Sponsor	Place & City	Infrastructure	Affects overall budget	40%	High Impact	Very high	Revise at least 2 or 3 locations per area	Time
1.1.1	Run out of budget	Sponsor	Change on the scope	Other requirements	Cancel locations	20%	High Impact	Low	PM - Organize meetings and reports to keep team on track	Time
1.2	Getting inadequate locations	Customer Experience Manager	Lack of documentation (photos & videos o visit)	Rushing & Lack of time	Lack of registrations	40%	High Impact	Medium	Ask for photos and organize video conferences or visits	Time
1.3	Extra charges	Operations Manager	Ignore limits	Rushing & Lack of time	Affects revenue	50%	High Impact	Medium	PM - Organize meetings and reports weekly to keep team on track	Time
1.3.1	Increase budget	Sponsor	Change on the scope	Unknown	Work overload	40%	High Impact	Medium	PM - Send reports related to budget weekly	Time
2.1	Selection & Hiring difficulties	Operations Manager	Missing deadlines	Lack of information	Increased workload	20%	High Impact	Very high	PM - Find resources to give support in the process	Time
2.1.1	Lack of hiring options	Operations Manager	Missing deadlines	Lack of information	Increased workload	40%	High Impact	Medium	Contact Co-op departments to find more candidates	Time

2.2	Missing hiring co-op cycle	Customer Experience M	Lack of information	Lack of information	Increase workload	40%	High Impact	Medium	Talk to Co-op department to find options	Time
2.3.1	Candidates withdraw the job offer	External	Better job offers	Better salary	Increase workload	10%	Low Impact	Low	Filter the candidates at the selection or interview	Time
2.4	Lack of training	Training & Development Manager	Lack of preparation	Rushing & Lack of time	Cause stress to the instructor	30%	High Impact	Medium	Find support to get the material ready	Time
2.5	Onboarding delays	External	External	Lack of information about how to get the documents	Delay signing contracts with locations	20%	Low Impact	Low	Establish constant communication in case of having any changes	No budget
2.5.1	Difficulties to collect instructors' documentation	Accounting	Lack of reinforcement	Lack of organization	Delay signing contracts with locations & Increasing working hours	20%	Low Impact	Low	Find ways to remember people to send information	Time
4.2	Delay of summer camp content	Training & Development Manager	Missing deadlines		Affect marketing campaigns	70%	High Impact	Hight	Risk and communication plans Build capacity building activities	No budget
4.3	Delay of marketing promotion	Operations Manager	Missing deadlines		Affect registrations	60%	High Impact	Very high	Organize calendar reminders	Time
4.4	Wrong forecast	Vice President	Over expectations		Generates uncertainty and more workload	>40%	High Impact	Medium	Review documentation and consolidate list	Time

4.4.1	Not having enough registrations	Customer Experience Manager	Lack of time		Increased workload	50%	High Impact	Medium	Being more aggressive with sales	Time
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Note. Source prepared by the author

#### 4.8.2 Identify Risks - Definitions of risk probability and impact.

All definitions of risk and impact are specific to the project and context.

**Table 24**

*Financial Risk*

Scale	Probability	+/- Impact on project objectives		
		Time	Cost	Quality
Very high	>75%	1 to 2 months	Increased rent of locations or extra charges	Very significant, can affect the presence in the new markets
Medium	55%	1 to 2 months	Low number of participants and more instructors hired outside of Vancouver	Affects children's experience and instructors' morale in the classroom.

Note. Source prepare by the author

**Table 25**

HR Risk

Scale	Probability	+/- Impact on project objectives		
		Time	Cost	Quality

<i>Very high</i>	<i>&gt;75%</i>	<i>1 to 2 months</i>	<i>Having selection and hiring difficulties could affect budget and force hiring a more expert instructor.</i>	<i>It could negatively impact the delivery of the camps because it will require increasing the number of students per classroom or hiring an okay instructor.</i>
<i>High</i>	<i>60-85%</i>	<i>1 to 2 months</i>	<i>Affect the percentage of registrations</i>	<i>Lack of training</i>
<i>Medium</i>	<i>40-60%</i>	<i>1 to 2 months</i>	<i>&lt; 30% of the budget</i>	<i>Delay in the onboarding process</i>

Note. Source prepare by the author

**Table 26**

*Technical Risk*

<i>Scale</i>	<i>Probability</i>	<i>+/- Impact on project objectives</i>		
		<i>Time</i>	<i>Cost</i>	<i>Quality</i>
<i>Very high</i>	<i>&gt;80%</i>	<i>1 to 4 months</i>	<i>50% of the number of registrations</i>	<i>High impact in the quality of the promotions for having a late Marketing campaign.</i>

<i>High</i>	<i>40-70%</i>	<i>&gt; 2 months</i>	<i>40% of the budget</i>	<i>High impact in the quality of the marketing strategy by having the wrong message or incorrect camp description.</i>
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Note. Source prepared by the author

**4.8.3 Plan Risk Response**

Five strategies may be considered for dealing with threats: avoidance, mitigation, acceptance, escalation, and compensation. Most organizations address threats at the project level by escalating them to higher levels of management. Escalation is an appropriate strategy when a threat is outside the project's scope or beyond the immediate control of the project manager. In some cases, it is more effective to engage in mitigation activities than merely accept risk. Compensation and acceptance are rarely used at this level, so the suggested strategy for the identified risks in this project is mitigation.

**Table 27**

*Suggested Strategy to identify risks - Mitigation*



<b>Financial Risk</b>	
<b>Increased rent of locations or extra charges</b>	
<i>Mitigation proposals</i>	
1.	Find other locations depending on the time left
2.	Have everyone under one location which requires renting more space at the same place
3.	The locations must comply with the requirements (Parking place, open space or garden, WIFI, classroom set up, commercial area, and accessibility)
<b>Low number of participants and more instructors hired outside of Vancouver</b>	
<i>Mitigation proposal</i>	
1.	Cancel camps if there are not more than 6 campers registered
2.	If there are more instructors hired, contracts cannot be modified. For that reason, they will have to take care of preparing After School Program content in September, work on project kits, and curriculum
3.	Ask instructors hired outside of Vancouver if they are interested in working in Vancouver
4.	If instructors hired outside are willing to come to Vancouver, more spots can be opened
<b>HR</b>	
<b>Having selection and hiring difficulties could affect budget and force the hiring of a more expert instructor.</b>	
<i>Mitigation Proposal</i>	
1.	Send the most expert instructor from Zen to cover the location with more students.
2.	Find the best hired instructors to cover the new locations

<b>Affect the percentage of registrations</b>	
<i>Mitigation Proposal</i>	
1.	If the instructor is not skilled enough, two instructors per class are required
2.	Find volunteers to stay with the instructor
<b>Delay of the onboarding process</b>	
<i>Mitigation Proposal</i>	
1.	Talk to the co-op department to see the possibility of decreasing the amount of time to approve the job offer from 3 to 1 day.
<b>Technical Risks</b>	
<b>Registrations are reduced 50% due to a late marketing campaign outside of Vancouver or to not having a positive response.</b>	
<i>Mitigation Proposal</i>	
1.	Improve the SEO strategy on the website, social media, and Google Business
<b>Wrong message related to the summer camp offer and or type of camps offered outside</b>	
<i>Mitigation Proposal</i>	
1.	Run Google campaigns with code discounts
2.	Run Google campaigns of Come to ZML summer camp with your best friend.
3.	Run different ads under AB test to see which group has the best response.

Note. Source prepared by the author

#### 4.9 Project Procurement Management

The ZML Summer Camp Project will rent a minimum of ten (10) locations among Victoria, Metro Vancouver, Calgary, and Edmonton where the basic equipment to deliver the camps such as video beam, tables, chairs, and WIFI will be provided by the locations. For other types of materials such as laptops, project kits, and 3D printers, ZML will be in charge. There is \$10k assigned for buying some materials such as paper, pencils, pens, dough, colour paintings, colour markers, or 3D printing filament if it is necessary, and the remaining amount of money could be distributed for video beams, in case it is needed, buying a 3D printer or 3D printing parts in case of any failure.

At the beginning of this document, it was mentioned that the Procurement process would not be part of this document. However, it will list some good practices and recommendations to be applied in future projects.

PMI BOK describes this area as the one that includes the processes to identify, acquire, and manage the resources needed for the successful completion of the project. The processes included are Plan Resource Management, Estimate Activity Resources, Acquire Resources, Develop Team, and Control Resources. (Project Management Institute, 2017)

The minimum human resources require to run summer camps outside of Vancouver are two people per location, with a minimum mix of technical skills, and a support team that will work closely with the core team at North Vancouver. See annex 4 where it was suggested a team distribution based on the experience acquired in 2021.

#### 4.9.1 Plan Resource Management

ZML's resources are distributed across three departments: 1. Human Resources. The HR department is divided into four teams: engineering, designing, marketing and business, and administration; 2. Equipment. The Maker Space has machinery for metalworking, woodworking, textiles, and electronics; 3. Materials. Miscellaneous materials for projects and office supplies are available on-site or can be ordered through the main office. As a start-up company, the core team is 12 people and new hires will work seasonally or per project; usually a large amount of hiring happens in the summer months.

Regarding the roles at ZML, they could change depending on the project and the task that will be assigned by the Founder or President, Cyri Jones. Functional teams will be led by one engineer, designer, or businessperson. This person will oversee and fulfill the requirements of the project.

Below are the steps that the Plan Resource Management requires

**Table 28**

*Plan Resources Management Steps*

<ul style="list-style-type: none"><li>• Name of the project</li><li>• Deliverable</li><li>• Start date and deadline</li><li>• Type of resources and budget (Team, materials, equipment)</li><li>• Type of client</li><li>• Client contact information (Internal or External)</li></ul>
<ul style="list-style-type: none"><li>• Objective and brief description (Internal and External)</li></ul>
<ul style="list-style-type: none"><li>• Sent request for approval to accounting (Any extra time, materials or contracts must be approved)</li></ul>

by Cyri Jones and Milena Alves)
<ul style="list-style-type: none"><li>• All purchases must have a purchase order approved by Cyri Jones</li></ul>
<ul style="list-style-type: none"><li>• Any contract with external clients that includes R&amp;D has to be discussed to see if it requires a MOU (Memorandum of Understanding), or NDA (Non -Disclosure-Agreement)</li></ul>

Note. Source by the author

#### 4.9.1.1 Control Resources

The control resources rely on three people Milena Alves, responsible for Accounting and Purchase Orders, John O. responsible for the Maker Space and in charge of inventory, and Cyri Jones who authorizes the project, organizes the team, and works on contracts, MOUs or NDAs.

Sequence:

1. Contract is authorized by Cyri Jones
2. Lead & Team are assigned by Cyri Jones
3. Team lead create procurement proposal
4. Cyri revises and approves proposal
5. Team lead sends purchase requirements to Milena who proceeds to fill the purchase requirements.

- *Decision Criteria* – Each item can get between 1-5 points. The vendor who has more points will get the contract, service, or product.
  - Experience and skills of the vendor to provide the product or service
  - Quality
  - Cost
  - Delivery date
  - Comparison of outsourced cost versus in-house

- Past performance
- Time of cancellation
- Vendors that work with environmental friendly products or materials will

have 3 points.

- Former vendors will be consulted first
- All new vendors have a performance metrics after finishing the contract, service, or product.

**Table 29**

*Performance Metrics Vendors*

<b>Vendor Name</b>	<b>Product/service name</b>	<b>Overtime delivery</b>	<b>Quality</b>	<b>Cost</b>	<b>Total time</b>	<b>Location</b>	<b>Total</b>
<i>Prusa</i>	<i>3D Printers</i>	<i>5</i>	<i>5</i>	<i>3</i>	<i>5</i>	<i>Czech</i>	<i>18</i>
<i>Tronxy</i>	<i>3D Printers</i>	<i>2</i>	<i>1</i>	<i>4</i>	<i>1</i>	<i>China</i>	<i>8</i>

### **Scale**

*5.Very Satisfied 4.Satisfied 3.Neutral 2.Unsatisfied 1.Very Unsatisfied*

Note. Source by the author

Since 2019, Zen Maker Lab has been gradually including the use of biodegradable materials and processes in their projects that guarantee reusing and recycling of some components of the projects.

## **4.10 Stakeholder Management Plan**

“The Project Stakeholder Management includes the processes required to identify people groups and organizations that could impact the project and to develop strategies’ for

effective engagement. “ (Project Management Institute, 2017) The processes are Identify Stakeholders, Plan Stakeholders Engagement, and Monitor Stakeholder Engagement.

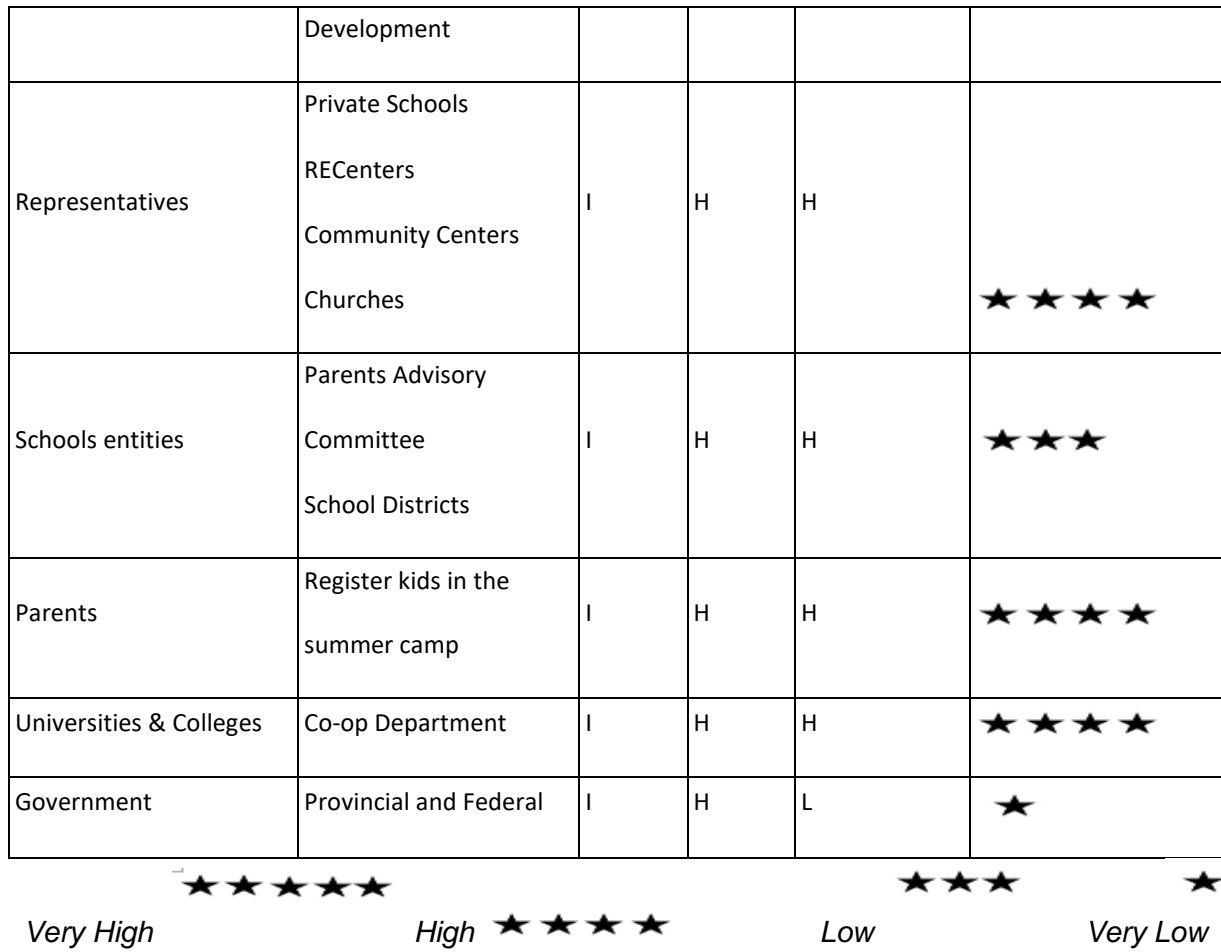
**4.10.1 Identify Stakeholders- Stakeholder Register**

In the Zen Maker Lab Summer Camp there are several important stakeholders who must be proactively involved throughout the phases of the project to facilitate the success of the project and its outcomes. Below are the main stakeholders on the project:

**Table 30**

*Stakeholder Registry*

Stakeholder name	Title	Role	Power (H/L)	Interest in Project (H/L)	Ability to Influence
Carolina C Vecino	Project Manager	D	H	H	★★★★
Cyri Jones	Sponsor	D	H	H	★★★★★
Tanner Brine	Director of Operations	D	H	H	★★★★
Jonas Lopez	Manager of Community and customer engagement	D	H	H	★★★
Spencer Brow	Manager Digital Media	D	L	H	★★★
Elaheh Khorvash	Manager, Training &	D	L	H	★★★



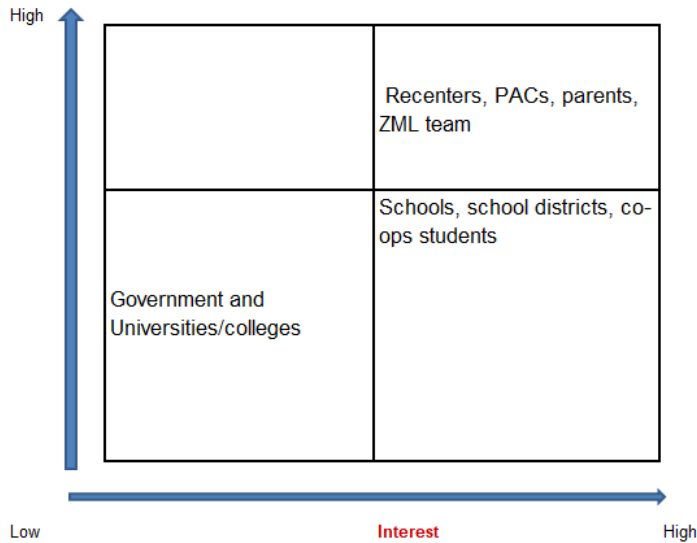
Note. Source prepared by the author

**Figure 19**

*Stakeholder Influence/ interest grid*



**Stakeholder Analysis - ZML Summer Camps**



Note. Originally published by Colin Eden and Fran Ackermann in their book *Making Strategy* (Pichler, 2015)

**4.10.2 Plan Stakeholder Engagement**

Zen Maker Lab’s future goal is to make presence into several regions in Canada and some schools and community centers or Recenters have expressed interest in their STEAM programs. In Recenters, for example, they are looking to have a strong offer to their clients in summer, which is an excellent opportunity for ZML in new markets such as Victoria.

The primary goal of this project is to run camps in Calgary, Edmonton, Victoria, and other locations in the lower mainland in Vancouver. In order to do this, ZML has to find locations with easy access for parents to drop off their children. Also, the locations have to provide a security plan to be able to run the camps safely. Additionally, having access to the Recenters' social media channels and email marketing among others, will attract families interested in bringing a new experience to their children in summer.

However, Covid-19 is still going around in some parents' heads, and they prefer to register their kids in outdoor activities after the government gave the order to not use masks. Nevertheless, some schools, community centers, reccenters and churches still require wearing masks inside their buildings. All this is affecting the number of registrations to the summer camp as ZML courses are indoors.

Some measures regarding Covid 19 that Zen Maker Lab has been announcing and talking about to their different audiences are its safety protocols and the fact that all its instructors are vaccinated. Addressing parents' concerns and working closely with the new locations on safety plans are some of the strategies developed to offset some of the possible inquiries.

The reccenters represent a big opportunity to advertise ZML. For that reason, the company has been working with them closely. Their input is valuable in terms of people's preferences and habits. All courses and activities outlined in the summer camps benefit participants because they relate to B.C.'s new curriculum and IB baccalaureate program that emphasizes teamwork and communication skills.

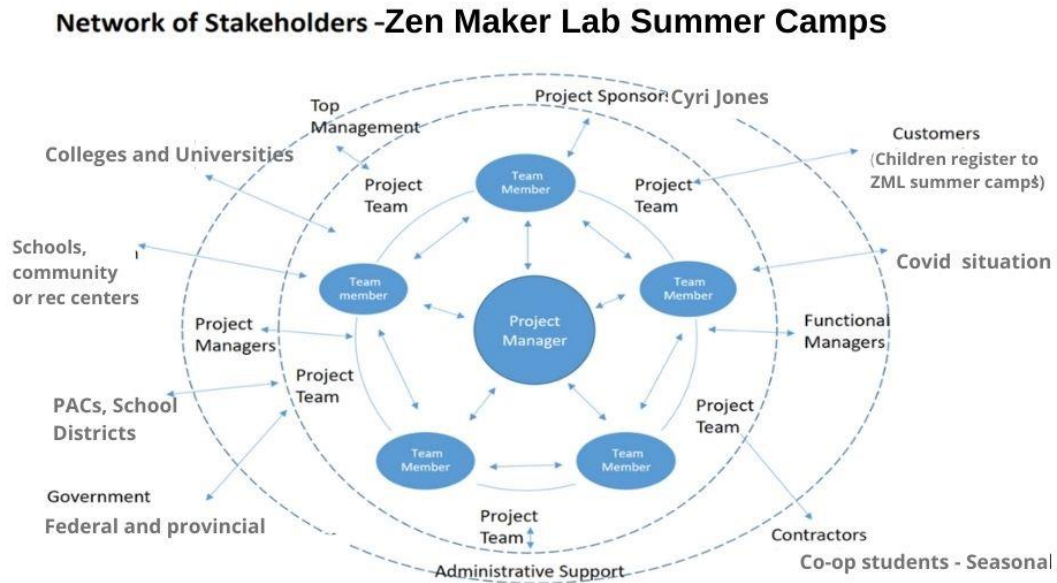
Some PAC members in Calgary and Edmonton have expressed interest in ZML summer activities. For that reason, ZML has started the conversation with some of them. In the future, these PACs could facilitate the introduction of new courses or products in their schools. The community of parents in these cities feel attracted to a new summer experiences. However, they often believe their children or youth require previous experience in STEAM, so marketing has been working on presenting what the Design, Make, and Play curriculum is.

Selecting and training the new instructors will be key to keeping the synergy that the core team has around STEAM education.

The following diagram shows how the stakeholders relate to each other to form a network of stakeholders around the ZML Summer Camp Project.

**Figure 20**

*Network of Stakeholders Sumer Camp at ZML*



Note. Source prepared by the author

**4.10.3 Stakeholder Register Matrix.**

The Stakeholder Register Matrix lists the stakeholders, their roles, expectations, requirements, and impact or influence on the project.

**Table 31**

*Stakeholder Register Matrix*

### Stakeholder Register Matrix

Project Name		<i>ZML Summer Camps outside of North Vancouver - Stakeholder Analysis</i>					
Main Sponsor		Cyri Jones					
ID	Stakeholders	Functional Area	Roles - Responsibilities	Main Expectations	Major Requirements	Influence/Impact (Low-Medium-High)	Additional Comments
1	Government (Provincial & Federal)	Education, and Health	Indirect - Ruled education and health policies related to Covid.	Ensured protection to people	None	Low/Low	
2	Recenters, community centers & schools, churches	Education and community service	Indirect - they have direct access to family and offer activities to them.	Getting a good price and bring a good experience in summer to their community	Promote the camps among their communities.	High / High impact	
3	Parents who register their children	Clients	Indirect - Influencers	Persuade parents who have register to their children in our programs to record testimonials talking about their kids or youth experience in our programs	Getting their participacion on social media channels	High Influence/ High Impact	

4	PACs	Education	Indirect - Bring the opportunity to present ZML summer camps to their communities	Having meetings with this groups	Open the space to talk to parents	High Influence/ Low Impact	
5	ZML Team	Education & Technology	Direct - Delivery of STEAM courses	Bring an unforgettable experience to children and youth in STEAM	Deliver an innovative experience, follow all safety standars and engage with the different stakeholders from Victoria, Edmonton and Calgary	High Influence/ High Impact	
6	Universities & College	Education	Indirect - Promote the summer job opportunity to work with ZML. Co-op departments in the STEAM area	Promote the job summer camp opportunity among their students and find the best candidates in STEAM areas.	Finding enough candidates	Medium Influence/ High Impact	
7	New instructors	Education & Technology	Direct - Delivery of STEAM courses	Deliver unforgettable experience to the participants to the camps	Engage with the students	High Influence/ High Impact	

Note. Source by the author based on A Guide to the Project Management Body of Knowledge PMBOK Guide Sixth Edition

## Conclusions

1. The Zen Maker Lab Summer Camps outside of Vancouver requires developing a solid HR process and engagement-marketing plan, especially outside of North Vancouver that was the lesson learned during the camps run in 2021.
2. The Project Charter formalizes the project and briefly identifies the organization authorities of the project, its objectives and resources. It is a contribution to the project management plan which is expected to be used in future years.
3. During the elaboration of the project management schedule, it was easy to identify the tasks and time frames in which each of them had to be executed. It can be perfectly to be consider in the future to run summer camps outside of Vancouver.
4. Project Cost Management showed the possibility of shortening the project timeline, which would save around 10% of the budget. However, this need to be adjusted based on the inflation in future years.
5. The Project Quality Management team found that it was essential to document every task, especially sprints with instructors, to collect the lessons learned and their feedback during the training process.
6. In the Resource Management Plan, the focus of ZML lies in its people. This includes the core team and seasonal workers. A list of skills is used to aid the hiring process and job descriptions. Additionally, a list of skills will facilitate the creation and organization of functional teams within the company. Creating and organizing existing roles, job titles, and processes will facilitate general operation systems within ZML.

7. The Communication Management Plan reflected the importance of organizing and categorizing stakeholders, channels, information, and frequency in order to facilitate activities and future interactions.
8. Risk Management identified the following risks: the inability to find locations, delays in marketing promotion, and selecting and hiring people. The alternatives to address these risks if they occur include finding new locations, making changes to the marketing plan, or promoting products online. Mitigation strategies were suggested for each of the three risks because their probability is high with the current project.
9. The Procurement Management Project will be applied to all projects, not just this one. Points of control and requests are essential to keeping the company's budget on track, guaranteeing good service to clients internally and externally, and knowing providers' capabilities and payment cycles. Also, this will contribute to keeping the inventory of everything organized and up to date.
10. Project Stakeholder Management showed the importance of engagement of schools, RECenters, and community centers, who could become allies in the future, to share their interests in STEAM education or to extend their portfolios of activities. An ecosystem was essential to visualize their interaction. It requires an ongoing interaction.



## Recommendations

1. ZML should revisit the lessons learned from its summer camp and update each stage of the project to guarantee its flow.
2. Zen Maker Lab should work to maintain a close business relationship with universities and colleges in order to attract new talent interested in STEAM education.
3. Summer-work placements are filled by students selected in December, which means that ZML must contact Co-op student departments between October and November. This will give ZML more time to select the best people. Sending requests in January or February to universities triggers unnecessary risks and puts pressure on the team. Also, it increases the possibility of not offering proper training.
4. To guarantee better results, the creation of databases and contacts for locations outside of Vancouver should start in October and continue into November. As a new company in a new territory, people need time to build trust and know what Zen does.
5. ZML does a good job of keeping their camps and other courses up-to-date with technology, which is beneficial for their students.
6. Implement and adjust the Procurement Plan outlined on this project. Also, including more vendors whose values and good environmental practices are similar to ZML could generate a positive impact in the communities.
7. Collecting feedback from the new locations, clients, and instructors with whom ZML works will create an improvement cycle in each area of the company.

8. The University should select a few projects where students will be able to develop and put into practice the PMI methodology as it would be in real life. Also, revising the basics is essential. During my time of studies, there were very knowledgeable people from all over and others like myself who were learning from scratch. Reviewing the basics in administration and teaching or having access to free tools such as MS Projects, Jira, and Azure for agile methodologies will be key throughout the master's to make them more competitive in the PM field. In addition, MS Projects should be used in the master's program since the beginning.

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## Annex

### Annex 1

*The following is the Project Charter for this project and has been reviewed and signed off with Zen Maker*

*Note. By the author. Template provided by Faculty during FGP Lab.*

PROJECT CHARTER	
Date	Project Name:
September 19, 2022	Zen Maker Lab's Project Management Plan for Summer Camps presence outside of Vancouver Victoria, Calgary, and Edmonton.
Knowledge Areas / Processes	Application Area (Sector / Activity)
Knowledge areas: Project Integration Management, Project Scope Management, Project Schedule Management, Project Cost Management, Project Quality Management, Project Resource Management, Project Communications Management, Project Procurement Management, Project Risk Management, Project Stakeholder Management Process groups: Initiating, Planning, Monitoring and Controlling	Education and Technology
Start date	Finish date



September 19, 2022	December 12, 2022
Project Objectives (general and specific)	
<p><i>General Objective:</i></p> <p>To create a Project Management Plan template to support Zen Maker Lab’s future expansion in summer in Metro Vancouver, Victoria, Edmonton, and Calgary based on the experience acquired in 2021 and following the standards of the Project Management Institute (PMI).</p> <p><i>Specific Objective:</i></p> <ol style="list-style-type: none"> <li>1. To generate a Project Integration Management Plan that helps to understand and articulate the project</li> <li>2. To develop a Project Scope Management Plan to establish the project outlook, resources and schedule to complete the deliverables.</li> <li>3. To create a Project Schedule Management to identify activities and resources required for project’s competition.</li> <li>4. To design a Project Cost Management Plan to estimate the budget and cost of the Summer Camps outside of Vancouver</li> <li>5. To create a Project Quality Management Plan to guarantee that suitable people will be hired, and the selected locations have the appropriate characteristics to run the summer camps</li> <li>6. To elaborate a Project Communications Management Plan to keep information on hand to maintain transparent communications with the stakeholders and minimize risks during the project</li> <li>7. To describe the proper steps to develop a Project Risk Management Plan that can be used in the future</li> <li>8. To describe the steps to elaborate a Procurement Management Plan that will help the company in the future</li> <li>9. To create a solid Project Stakeholder Management Plan to facilitate project development</li> </ol>	

to run the camps in Victoria, Edmonton, and Calgary.

**Project purpose or justification (merit and expected results)**

By developing a Project Management Plan template for Zen Maker Lab Summer Camps based on the experience acquired in 2021, the company will closely follow the execution, monitoring, and controlling of their expansion out of North Vancouver, a place that has been its backyard for more than 8 years. The opportunity to go after new markets, due to COVID and Zen Maker Lab finding that STEAM (Science, Technology, Engineering, Art, and Math) subjects, are in high demand opens up its doors. Educators and parents have found it imperative to expose their kids and students to new technologies, but not in a traditional way. It is here where Zen Maker Lab has an opportunity due to its innovative engineering and educational learning-based projects that elevate kids' capabilities starting from ideation, conceptualization, making, and playing. However, competitors with inferior content, but stronger financials, have been looking to expand their businesses, too. It is now where Zen Maker Lab can leverage its curriculum, methodology, equipment, partners, sponsors, engineers, designers, entrepreneurs' skills set, and reputation.

**Description of Product or Service to be generated by the Project – Project final deliverables**

A complete Project Management Plan.

If the company can establish a proper system to hire instructors and find locations based on total sales, it will minimize shortcomings or risks.

The ideal scenario will be to establish alliances or find partnerships for next year.

Having the plan will facilitate the delivery of summer camps outside of North Vancouver.

**Assumptions**

<ul style="list-style-type: none"> <li>• If the company can create the HR process and identify the cycle of the co-op students, it will facilitate the hiring and training process in the different locations.</li> <li>• If the training process is completed and adequate, it will open the possibilities of having families interested in ZML summer camps and it will be easier to establish alliances or find partnerships.</li> <li>• Having the plan will facilitate replication of the camps at almost any location.</li> </ul>		
<b>Constraints</b>		
Time, resources, external situation (Covid-19), and workload		
<b>Preliminary risks</b>		
Time, resources, workload, competitors, co-op cycles at different universities and requirements, and Covid-19 regulations		
<b>Budget</b>		
Assigned by the sponsor		
<b>Milestones and dates</b>		
Milestone	Start date	End date
Project Start	September 19 <sup>th</sup>	October 2 <sup>nd</sup>
Project charter		
WBS		
Charter	October 3 <sup>rd</sup>	October 16 <sup>th</sup>
Scope Management Plan		
Project Time Management		
Schedule Management Plan		
Stakeholder Management Plan		
Risk Management	October 17 <sup>th</sup>	October 30 <sup>th</sup>
Cost Management Plan	October 31 <sup>st</sup>	November 13 <sup>th</sup>
Resources Management Plan	November 14 <sup>th</sup>	November 27 <sup>th</sup>
Communications Management		

Plan		
Project Management Plan	November 28 <sup>th</sup>	December 4 <sup>th</sup>
Relevant Historical Information		
<p>Zen Maker Lab is a local business that opened its doors in 2013 in North Vancouver, British Columbia. Cyri Jones, Founder and President of the company believes that education and technology are important tools in the social and economic development of individuals and society. His premise is education needs to be accessible and help people acquire skills that allow them to solve real problems. ZML has been delivering programs in STEAM (Science, Technology, Engineering, Art, and Math) for kids, youth, and adults through project-based learning. Also, it has brought support to the community and opened a space to more than 10,000 people to acquire skills in technology and entrepreneurship. Some relevant milestones of the organization are listed below.</p> <p><i>2013</i></p> <p>In School program launched introducing thousands of children to STEAM</p> <p><i>2017</i></p> <p>North Vancouver-based business incubator Zen Launchpad spins off ZML and establishes one of the first child focused maker labs in North America</p> <p><i>2018</i></p> <p>Launch Zenshields to support first respondents who were exposed to Covid 19</p> <p><i>2020</i></p> <p>Invited by Mulgrave School to deliver summer camps. ZML have been delivering camps ever since. Winner of the NV Chamber's Covid-19 Local Leaders Award in the Inspiration category. MLA Bowinn Ma spoke in front of the legislature in Victoria, capital of British Columbia, about the innovative and valuable contribution that Zen Maker Lab offers. The Honorable Minister of the Environment and Climate Change, Jonathan Wilkinson, is a guest on the Design Make Play Show.</p> <p><i>2021</i></p> <p>Opened new Shipyards location in North Vancouver and launched the DesignMakePlay Fab Academy.</p>		

North Vancouver School District Trustees approve the NVSD Robotics Academy with Zen Maker Lab as service provider.

**Stakeholders**

Direct stakeholders:

Cyri Jones – Zen Maker Lab’s Founder and President

Tanner Brine – Director of Operations

Jonas Lopez – Manager of Community and customer engagement

Spencer Brow – Manager Digital Media

Carolina Cifuentes Vecino – Project Manager

Indirect stakeholders:

Parents Advisory Committee (PAC)

Private Schools

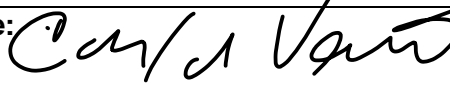
RECenters

Co-op Departments of Universities

Community Centers

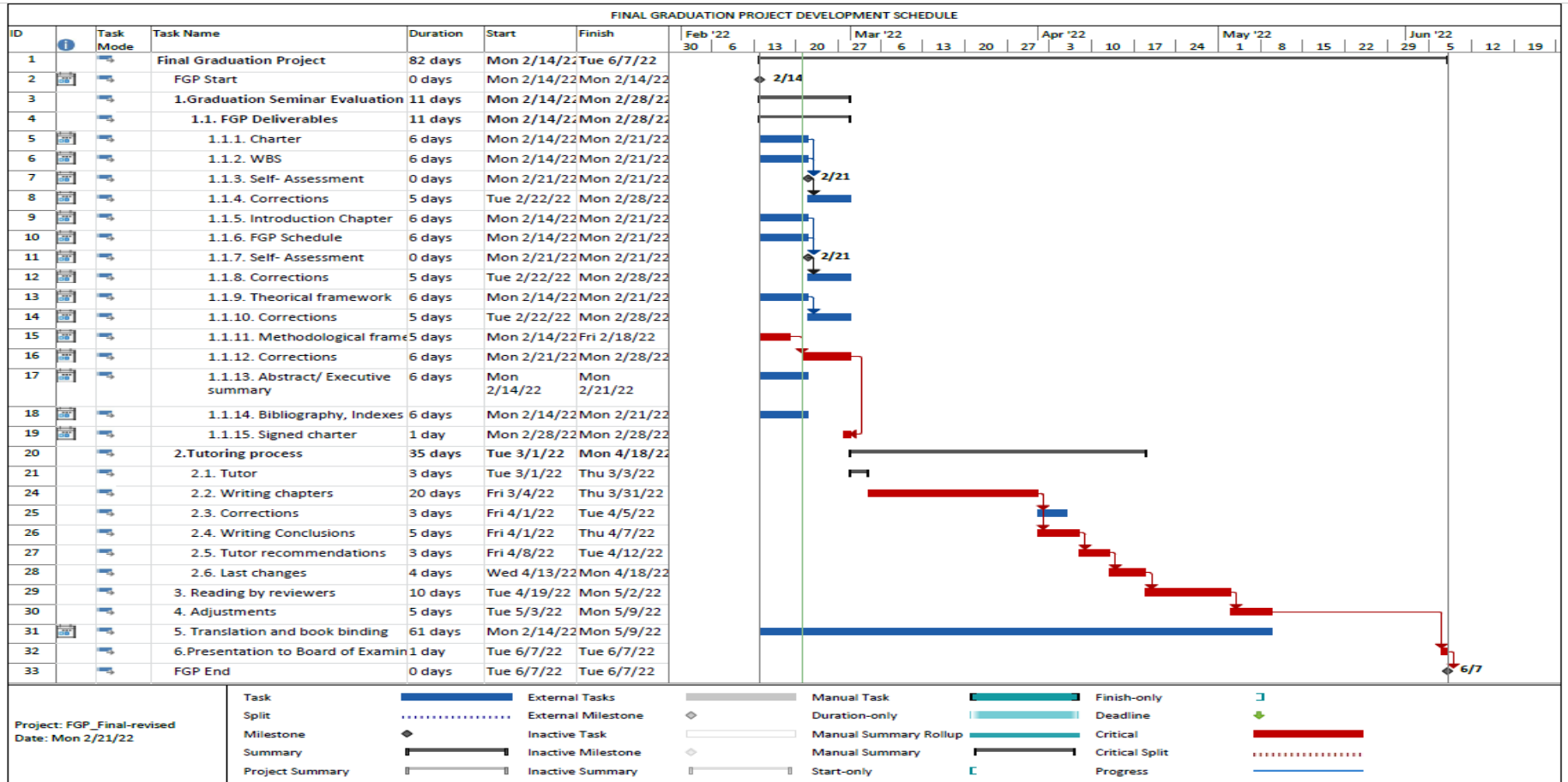
Churches

Parents

<p><b>Project Manager:</b> Carolina Cifuentes Vecino</p>	<p><b>Signature:</b> </p>
<p><b>Authorized by:</b> Cyri Jones</p>	<p><b>Signature:</b> <b>Cyri Jones</b></p>

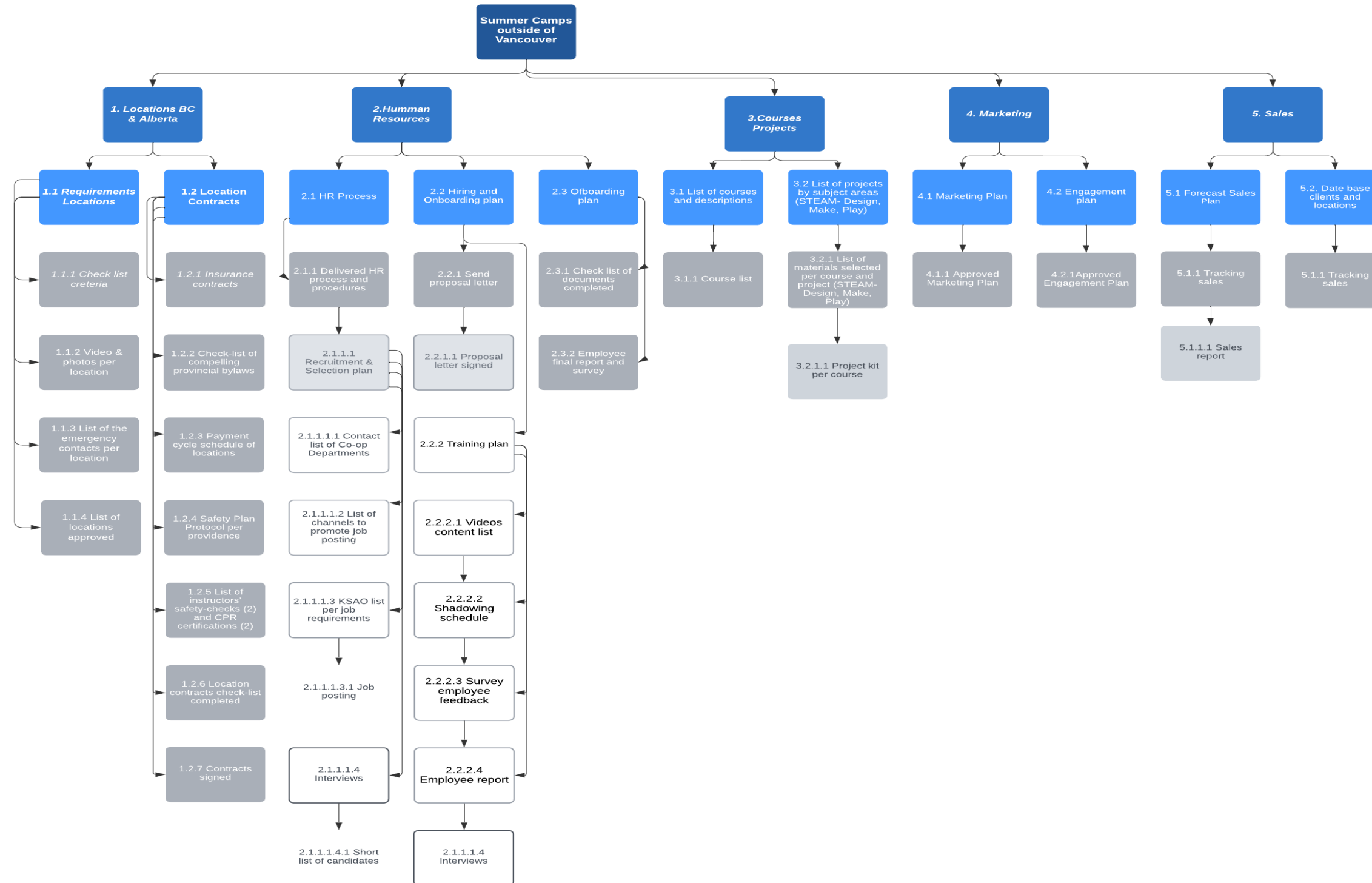
## Annex 2

### Final graduation Project Development schedule



**Annex 3**

*WBS Graphical view – Summer Camps outside of Vancouver*



**Annex 4**

*Team distribution based on the experience acquired in 2021*

Team member	Role	Marketing		Business	Engineering	Design	Web design	Robotics	Science
		Social media	CRM						
Co-op students outside of North Vancouver 1	Teaching	Basic	Basic	Basic	Competent	Basic	NA	Competent	Competent
Co-op students in Metro Vancouver 1	Teaching	NA	NA	NA	Advance	Advance	NA	NA	NA
Co-op student outside of North Vancouver 2	Teaching	Basic	Basic	Basic	NA	Competent	Competent	NA	NA
Co-op student Metro Vancouver 2	Teaching	NA	NA	NA	NA	Advance	Advance	NA	NA
Co-op 1	Support core team	Competent	Competent	Competent	NA	Basic	Basic	NA	NA
Co-op 2	Support core team	Competent	Competent	Competent	NA	Basic	Basic	NA	NA