Appendix A

User Group 1: Professional Parents

User Profile

1. Name of users: Many

2. General responsibilities or activities:

- Registering and managing child information
- Communicating with staff
- Paying of payments and receiving invoices
- Accessing reports/photos of child progression, behaviour and development
- Receiving alerts on emergencies and incidents

3. Computer skills: Moderate

4. Domain expertise: Moderate

5. Type of system use: Low

6. Goals: To interact and get real-time updates of child development

7. Pain points:

- User likes to receive her child's photos privately
- User would like to do payments online and not physically
- To receive instant updates of child's activities for connectivity

8. Usage contexts: The software app will be used on home and work mobile phones.

9. Software ecosystem: Emails,

10. Collaborators: Teachers, care takers

11. Frequency of use: Occasionally (several times a week)

Persona

Name: Annie Troy

User Role (based on user profile): Software Developer

Gender: Female

Age: 30 years

Education: Bachelor of Computer Science

Location: Wellington, New Zealand

Disability: None

Quote:

With my busy schedule, it was quite a challenge finding a suitable day-care as I need a reliable and a very simple way of staying connected with my child when he is at day-care. I would like to have all tasks at my fingertips because of time constraint and get updates of all activities done.

Computer Literacy:

[ ] High   [√] Moderate   [ ] Low   [ ] None

Application Expertise: *(knowledge of similar systems)*

[ ] High   [√] Moderate   [ ] Low   [ ] None

System Expertise: *(knowledge of a particular system and its methods of interaction)*

[ ] High   [ ] Moderate   [√] Low   [ ] None

Task Expertise: *(Level of knowledge of job and job tasks)*

[ ] High   [ ] Moderate   [√] Low   [ ] None

Frequency of use: Several times a week (Occasionally).

Attitude (feeling toward job or system): I feel very enthusiastic when using technology for streamlining of daily tasks but at the same time very cautious when it comes to privacy and security issues.

Backstory (including motivation and pain points):

Annie is a busy working professional who is trying to balance her career and challenges of motherhood. The development of her 3-year-old son is her priority during this period and makes sure that he receives education and care with utmost quality while she is away at work. Annie struggled to find a proper childcare that suits her needs. She is a person who is looking forward in simplifying her life with modern technology. Furthermore, she is extremely concerned regarding privacy and security of her personal family data.

Primary activities this user will engage in:

- The easy access to communication with staff of childcare directly for updates and concerns.

- Receiving photos (real-time) of her son's activities daily and confidentially.

- The access of parental tips and educational content when supporting son's learning at home.

Scenario

I have an extremely busy schedule and therefore, my child spends most of his time at day-care. Currently I do not receive instant updates of his daily routine or real-time photos even though there is an app, and this frustrates me as I really want to stay connected with my son throughout the day as I do not get the opportunity due to work. As a result, I am not aware of his behaviour, things he enjoys doing at daytime, his weaknesses etc. Which makes me feel that I am a horrible mum. This makes me embarrassed.

Another thing is that I cannot physically go to day-care every week to make payments and would like to pay online every week. I needed proof of payment to be shown for a visa but unfortunately it was not with me as the app doesn't have that feature. I had to visit day-care to get it and it wasted my time. During the last week, one of my child's photos of misbehaving had gone to another mum and she called me to enquire about it and was questioning me. This was not a good feeling as my personal photos had leaked in another person's hands. I felt unsecure.

Interview

Background: Mrs. Annie Troy is a software developer at a reputed software company who has an extremely busy schedule. She has very challenging responsibilities as a software developer and as a mother. She is trying to balance her career and the challenges of motherhood. She has a 3-year-old son. Annie struggles with finding a suitable childcare which provide suitable education and quality care. Currently she wants to be connected with her child and to be a good mom. She is interested in having a mobile app which can do all the tasks at her fingertips with the concern of privacy and security. This interview below is with Mrs. Annie about the vision and creation of the system. One of our team members contacted to do a contextual inquiry for such system.

Mrs. Troy: Hi

Team Member: Thank you for your time given in your busy schedule. Mrs. Troy, can you describe your typical day and how you manage your childcare for your children?

Mrs. Troy: My day starts early, and I have an extremely busy schedule. As it was quite packed, I dropped my son at the childcare center early morning before heading to work. My child spends most of his time at the day care. It's a challenge to keep up with his activities and progress while I'm at work. Currently I do not receive any instant updates of his daily routine or real time photos even though there is an app. It really frustrates me as I really want to stay connected to him throughout the day. Even though I have a tight schedule I can manage the time to view his photos and updates as I do not get the opportunity due to my work. This makes me feel as if I'm a bad mom. It's a challenge to keep up with his activities and progress while I work. But rather I would like to know about his behavior, things he enjoyed doing at daytime, his weaknesses etc.

Team member: What features do you think would be helpful in a mobile app designed for parents to engage with childcare centers?

Mrs. Troy: Real-time updates would be great, like when my son participates in activities or if there are any urgent issues. Also, a way to easily communicate with his teachers or book parent-teacher meetings would be helpful. Access to his daily schedule, photos, and reports through the app would make me feel more connected to his day.

When I came here 2 years ago it was very difficult to find a childcare center for my son because most of the childcare centers provide their details and enrolment system manually. I really did not have time to hunt for centers and even if I did still there is no way I would know the backgrounds of the teachers there as that is a thing, I consider very important of with whom I will be leaving my child with.

Team Member: In addition to getting updates, what are the other features do you like to have in the app?

Mrs. Troy: I think in addition to that, it needs to be secured. I don't want the photos of my child to go viral on social media. Also, about the payment mode. I would like to have an online payment mode to make the payment and a reminder for the payment would make it easier.

Team Member: Thank you very much for your time. We will share the system design document once we finish our work on it.
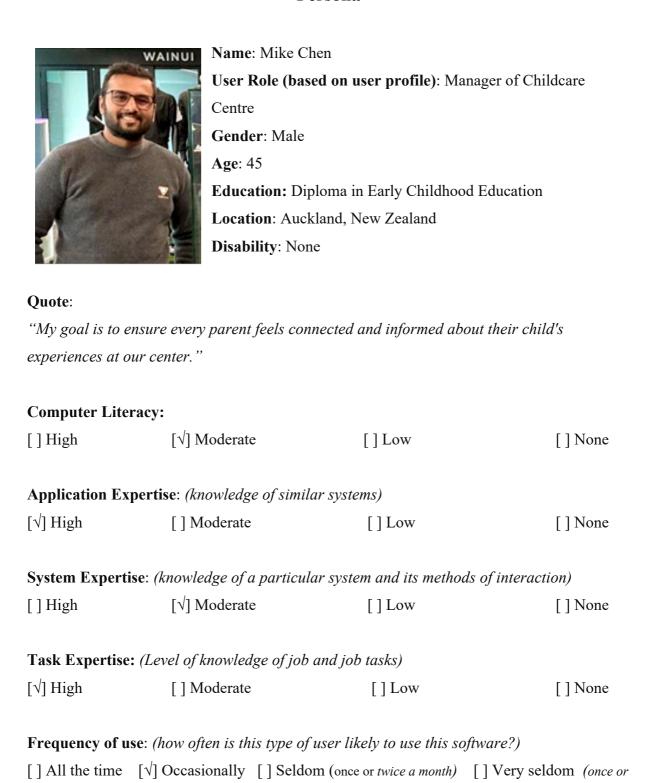
Mrs.Troy: Thank you and I would like to wait for your new system.

User Group 2: Childcare Provider

User Profile

1. **Name of Users:** Many
2. **General Responsibilities or Activities:** User would use the website to:
   - Managing Enrollments
   - Scheduling and Attendance Tracking
   - Billing and Payment Processing
   - Communication with Parents
   - Staff Management
   - Curriculum Planning
   - Health and Safety Compliance
   - Facility Management
   - Attendance reporting and Record Keeping
   - Parent Engagement and Feedback
3. **Computer Skills:** Moderate to High
4. **Domain expertise:** Frequent use so moderate expertise to high
5. **Type of system use:** Mandatory
6. **Goals:** To share resources and access them conveniently
7. **Pain Points:**
   - Complex Navigation and user interface
   - Inefficient Communications tools
   - Limited Customization for reports and records
   - Challenges in scheduling and attendance tracking

8. **Usage Contexts:** This application will be used on range of devices including desktops, workstations, and mobile devices. Childcare providers will often access the app on through web browser.
9. **Software Ecosystem:** Payment gate, Email services, Microsoft office, Jira
10. **Collaborators:** Parents, Job seekers, Government officials
11. **Frequency of Use:** Occasionally

Persona

Name: Mike Chen

User Role (based on user profile): Manager of Childcare Centre

Gender: Male

Age: 45

Education: Diploma in Early Childhood Education

Location: Auckland, New Zealand

Disability: None

Quote:

"My goal is to ensure every parent feels connected and informed about their child's experiences at our center."

Computer Literacy:

[ ] High   [√] Moderate   [ ] Low   [ ] None

Application Expertise: *(knowledge of similar systems)*

[√] High   [ ] Moderate   [ ] Low   [ ] None

System Expertise: *(knowledge of a particular system and its methods of interaction)*

[ ] High   [√] Moderate   [ ] Low   [ ] None

Task Expertise: *(Level of knowledge of job and job tasks)*

[√] High   [ ] Moderate   [ ] Low   [ ] None

Frequency of use: *(how often is this type of user likely to use this software?)*

[ ] All the time   [√] Occasionally   [ ] Seldom (once or *twice a month*)   [ ] Very seldom *(once or twice a week).*

Attitude (feeling toward job or system):

I rely on our platform for efficient operations and seamless communication to prioritize the well-being of the children in our care.

Backstory (including motivation and pain points):

Experienced childcare centre manager with a passion for providing a nurturing environment for children of all ages. Skilled in overseeing daily operations, managing staff, and maintaining compliance with regulations. Proficient in using technology to streamline administrative tasks and enhance communication with parents. Dedicated to fostering positive relationships with families and ensuring the highest standards of care and education.

Primary activities this user will engage in:

- Be able to manage parent and caretaker user profiles under the childcare center.
- Group Communication with all parents and caretakers.
- View and manage care center details such as info, availability, news, etc.
- Post job vacancies for signing up new caretakers.
- Be able to extract various business intelligence reports.
- View and comment on user reviews

Scenario

As a childcare centre manager in Auckland, we cater to families with children aged six months to five years old. The facility is spacious, bright, and equipped with age-appropriate toys, books and learning materials. Center staff consist of trained and certified early childhood educators who are passionate about providing a naturing and stimulating environment for children to learn and grow. As a childcare provider committed to inclusivity and support for all children, we assure parents that our childcare centre is dedicating to create an environment where every child can thrive. We invite every parent to tour the facility and discuss their Childrens' specific needs and preferences. During the tour, many children show a keen interest in the sensory corner, where children happily explore different textures and shapes. After the tour, parents can develop a personalized care plan for special need children. Together with the parents we can discuss the child's strengths, challenges, and individual learning goals.

Recently, I got so many calls from job seekers to inquire about the job vacancies. But with the current system I cannot upload the details to the system about the job vacancies. And unable to view the job details that are currently posted. Since, most of the things are handled manually recently child enrolment documents has got misplaced. Even though the document recovered successfully its better if can have some automated system. And some immediate emails that has sent regarding the last week holidays was not opened by the parents and most of them came across the childcare centre on the holiday. Because of that some leave updates were also collapsed and two of my teachers has taken holidays on the same date where the whole Center went miserable with the rest of the teachers.

Interview

Background: Mike Chen is a Childcare provider who has background history of being an experienced childcare center manager, with a passion for providing a caring surrounding for children of all ages. He is not only trained in Early Childhood Education but also in technology. One of his main responsibilities includes overseeing daily operations, managing staff, and maintaining compliance with regulations. He gets lots of emails from the parents as well as the job seekers. Due to his erratic schedule, it is difficult to manage the time to response to all since some of the work is still done manually. So, he is interested in creating a mobile app which helps him to equilibrium the administrative tasks and enhance communication with the parents to foster positive relationships with the families. The interview below is with Mr.Chen about the vision and creation of the app. One of our team members contacted him to do a contextual inquiry for such system.

Mr.Chen: Hi

Team Member: Thank you Mr.Chen for your time. Could you please describe briefly what you need in this app?

Mr. Chen: Yes. To be brief I mainly focused on an app to handle parent inquiries as I want every parent to be felt connected and give them update of the daily journal records. Apart from that if it could manage the administrative work, the work would be much easier.

Even though I have given you a brief context, the tasks are not that simple. From the start to the end of the day there are several inquiries from parents. Therefore, I must provide them with the improvements of each child. When it comes to the administrative staff, managing the staff and above all meeting the regulations of the ministry of health and Kindergarten Association is a must.

Team Member: Could you please tell me how your childcare center contacted the parents currently?

Mr.Chen: Mainly we used email to contact parents. But when it comes to enrolling and other administrative part it still handles manually. It is time consuming, and parents miss out on some of the important information. When it comes to the enrollment process, it goes up with the manual procedure. And of course, there are so many inquiries on enrolments. Specially from

the new immigrants. The brochures we have for the new enrollers are manual so anyhow they have to visit our center to get the information.

Team Member: What are the activities you handle, still managed manually?

Mr.Chen: Well, managing enrolments, scheduled and attendance management, Billing, staff management, curriculum planning, health and safety compliance etc.

Team Member: Tell me more about how do you envision this working?

Mr.Chen: Well, the app could help for a smooth-running of the relationship with parents. This may be both currently enrolled parents and the parents who seek childcare centers for their kids. For the parents, whose children are already enrolled can have immediate alert for any reminders and emergency situation. It would be great if could share the children's daily activities and achievements more interactively perhaps with photos, quick updates which aren't attainable through email.

For the parents who have not yet enrolled their children, they should be able to grab details about the childcare centers. And if it is possible, if parents are willing to enroll the child, enrolment procedures should also get control of the manual process.

Team Member: In addition to connecting and informing the parents, what are the other features do you like to have in the app?

Mr.Chen: It could be better, If the app can give a specific feature that can be helpful for the job seekers, who are giving so many calls and dropping off the CVs.

Meantime, if it can handle the care center details such as care center info, availability, news and generate business intelligence report will help me to minimize the administrative tasks and to come up with and keep the standards of ministry of education and kindergarten Association on childcare centers to operate productively.

Team Member: Thank you very much for your time. We will share the system design document once we finish our work on it.

Mr.Chen: I look forward to seeing it.

User Group 3: Caretaker Job Seekers

User Profile

1. **Name of Users:** Many users

2. **General Responsibilities or Activities:** User would use the website to:

    - Upload resumes, certifications, and other relevant documents.

    - View job postings and application requirements

    - Share qualifications and experience with potential employers

    - Manage personal profile and application history

    - Download job descriptions and related resources

3. **Computer Skills:** Low to Average

4. **Domain expertise:** Varies from low to average, depends on individual experience with job search and online platforms

5. **Type of system use:** Discretionary

6. **Goals:** how does this software tool help this user reach their goals?

    - To apply for job opportunities by easily uploading and managing relevant documents

    - To expose qualifications and experience with employer in a straightforward manner.

    - To access job postings and application details quickly

7. **Pain Points:** what nagging problems can this software help solve?

    - Job searchers want to upload their resumes and credentials so that they can be accessed from any device and apply for employment

    - Simplifying the process of sharing qualifications with employers while avoiding unnecessary storage

    - Quick access to job posts and related information is required to stay update with available opportunities

8. **Usage Contexts:** This application will be used on range of devices including home computers, workstations and mobile devices. Job seekers will often access the app on though downloaded mobile app or web browser.

9. **Software Ecosystem:** Integration with email services, web browses

10. **Collaborators:** Care center admin

11. **Frequency of Use:** Low to medium, depending on active job seeker's status

Persona

Name: Rianna Bowley

User Role (based on user profile): Early Childhood Educator – Job Seeking

Gender: Female

Age: 27

Education: Bachelor's Early Childhood Education

Location: Auckland, New Zealand

Disability: None

Quote:

"Finding the right childcare centre that aligns with my teaching qualifications and values".

Computer Literacy:

[√] High　　　　　　　[ ] Moderate　　　　　　　[ ] Low　　　　　　　[ ] None

Application Expertise: *(knowledge of similar systems)*

[ ] High　　　　　　　[√] Moderate　　　　　　　[ ] Low　　　　　　　[ ] None

System Expertise: *(knowledge of a particular system and its methods of interaction)*

[ ] High　　　　　　　[√] Moderate　　　　　　　[ ] Low　　　　　　　[ ] None

Task Expertise: *(Level of knowledge of job and job tasks)*

[√] High　　　　　　　[ ] Moderate　　　　　　　[ ] Low　　　　　　　[ ] None

Frequency of use: *(how often is this type of user likely to use this software?)*

[ ] All the time　　[√] Occasionally　[ ] Seldom (once or *twice a month*)　[ ] Very seldom *(once or twice a week)*.

Attitude (feeling toward job or system):

Positive and proactive regarding the usage of digital resources for job search process, however concerned about effectiveness of those platforms to convey experience and ability of job seekers to employers.

Backstory (including motivation and pain points):

Rianna recently graduated with a Bachelor's Early Childhood Education and is excited to begin her career in early childhood education. She is dedicated to establishing inclusive, entertaining, and educational environments for children. Rianna is seeking for a job opportunity that not only provide a supportive and innovative working environment, but also allow them to have a significant impact on children's early development. She is interested in utilizing digital platforms that can effectively expose her educational qualifications, skills, experience, and personal interest to potential employers.

Primary activities this user will engage in:

- Create an account.
- Explore and apply to job openings at childcare centers through the mobile app.
- Showcase her educational background and teaching experience to potential employers.
- Receive notifications about job opportunities that match with profile and preferences.
- Connect and communicate with childcare center admin for job interviews.

Scenario

Rianna recently graduated from university with Bachelor's Early Childhood Education with flying colours and now seeking for perfect job opportunity where she can put her skills and enthusiasm to use. She is a passionate individual with a heart dedicated to nurturing and educating young minds. She begins her job search by researching various Early Childhood Education Centers, schools, and daycare facilities in her area. She explores their philosophies, curriculum model and staff requirements to find the best fit for her skills and values. Armed with this information, she updates her resume and creates a compelling cover letter highlighting her passion for working with young children and her relevant experience. Understanding the importance of networking, in the field of education, she reaches out to her professors, mentors and former colleagues for an advice and job leads. She attends professional development workshops, seminars and conferences related to early childhood education to expand her network and stay updated on industry trends. She also engaged with the online communities and forums dedicated to educators to seek advice and share her experiences.

Rianna thinks that it is really take times when searching for a job. Going for each childcare centre page and their carrier opportunities and compare the requirements for the job with the qualification she had taken more time. Uploading resumes for the job seeking pages and define cover letters to each job is an uninteresting job task. She must match the qualifications as well as the location of the care centre as she recently applied for a job and after she received an invitation for the interview only, she got to know that to reach the care centre she must go for more than 30km per day. She needed to keep track of the job vacancies she has applied as she has applied them from several pages and when the job recruitment agencies contacted her, she finds it exceedingly difficult to identify from which care centre they are contacting her.

Interview

Background: Rianna is an early childhood educator that recently graduated with a Bachelor of Early Childhood Education. She is so enthusiastic to stablishing inclusive, entertaining, and educational environments for children. Rianna is seeking for a job opportunity that not only provide a supportive and innovative working environment, but also allow them to have a significant impact on children's early development.

The interview below is with Rianna regarding the vision and creation of the system. Miss KK is the member of the Tiakki Kiddos team contacted to do background inquiry for such a system.

Rianna: Hi and welcome Miss KK.

Team Member: Thanks for your time, Miss. Rianna. Can you briefly explain the requirements you have for this system?

Rianna: Yes, I'm looking for a system that I can find childcare center for job vacancies that orients with my teaching qualifications and values. Most of the times when I was searching, I found out common details about childcare centers, not the vacancies and the requirements which I needed to apply for the employment there.

Team Member: Could you please tell me; how did you search for job vacancies usually?

Rianna: Normally I used digital resources to search for the job vacancies. But concerned much more about convenient platform for applying for those.

Team Member: Tell me more about how do you intend a mobile app to overcome your problem?

Rianna: I would like to have a single platform for search and applying for the job vacancies which requires matching qualifications of mine. It would be much easier to me, if I get notifications about the new job opportunities that match my preferences.

Team Member: Do you have any privacy concerns about this system?

Rianna: Yes of course, I prefer to keep highly private my personal details and qualifications.

Team Member: Thanks a lot for your valuable time. We will work on a series of design informing documents and share them with you.

Rianna: Great, I look forward to seeing them.