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1. Agency Background & Capabilities

1.1 Agency Contact

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1.2 Agency Summary & History

HUBBLEWAVE was set up in 2012 by a small group of loosely-coupled web/mobile developers in Shanghai. The core team has several decades of extensive web/mobile development experience, most of its members hold BS, MS or even PhD in computer science. Since then the Agency has been growing into remotely connected teams including designers, developers and QAs in China, India, Eastern Europe, working on a dozen of web/mobile projects and gradually pivoting into data analytics and machine learning. The mission of the agency is to provide high quality start-of-the-art cloud-based enterprise mobile/data solution.

1.3 Agency Portfolio

- Moon+ Android Book Reader:
  Supporting various navigation and display features, various book formats and local and online library management.
  https://play.google.com/store/apps/details?id=com.flyersoft.moonreader

- Fooda (Online food ordering app at office):
  Users can use Fooda application to buy fresh, great tasting lunch options that rotate daily right into your office.
  iOS - https://itunes.apple.com/us/app/fooda/id476660276?mt=8
  Android - https://play.google.com/store/apps/details?id=com.vokal.fooda

- Go Share:
  GoShare connects drivers who have a pickup truck or cargo van with people and businesses nearby who need help delivering, moving & hauling large items on demand. GoShare driver will meet customer at the pickup address, help them load cargo into their vehicle, take it to the drop off address and help them unload.
  Customer - https://itunes.apple.com/us/app/goshare-moving-delivery-hauling/id977871324?mt=8
  Driver - https://itunes.apple.com/us/app/goshare-driver-earn-money/id978279500?mt=8

1.4 Design, Development, & QA Capabilities

We have one project manager, one designer and several Android/iOS developers in Shanghai, and one designer and one or two developers in each other location. We adopt agile development methodology, and each developer is responsible for testing his/her own code. We do regular code review in house and cross teams. Coordination and collaboration are

made by working on distributed source control platform Github/Bitbucket, and using team management tools such as Slack, Skype, Trello. We do integration test and outsource acceptance test to industry standard mobile testing cloud such as TestIn and Xamarin Test Cloud, prior to customer acceptance test.

A typical software project life cycle begins with meeting with the client for requirement analysis and negotiation, clarifying the scope of work, initial design, work flow, mockups, and initial timeline and budget. The project manager then works with the architect and software developers to deliver functional specification and software architect diagram if any, and detailed specification. Based on these, a detailed project plan is delivered including detailed timeline, resource allocation, quality management plan, and risk control and management plan. Agile development methodology is adopted for development process. The Github integrated standard CI/CD is set in place for continuous integration and delivery. Designers, and Android and iOS developers work in parallel roughly according to the detailed project plan.

To ensure high quality code, the detailed project plan accommodates one day testing and bugfixing each week in a revolving way. Everyone in the project acts end user tester to find and report bugs at Github issues system. Code review is performed upon each Github Pull Request before committing into main line repository. Project wiki documents each deliverable and get version controlled and reviewed in the same way as code to ensure best in class documentation. Designer is also responsible for writing user and training manual.

We consult our friend Patricia Johnson, an open source security and licensing expert, to maximize the benefits of open source and ensure the integrity of the IP of the final product. We use private Github/Bitbucket repository to ensure security of code and client materials. For strict confidential materials, we use on-premise Gitlab repository to ensure only authorized personnels having access to them.

2. Project Proposal

2.1 Project Concept & Recommendations

With our understanding, the CI&R mobile app is to be developed to better help families and staff case managers to access comprehensive state and local programs and services serving families, pregnant women and children. The goal is to improve efficiency, reduce effort and possibly (labor) cost, in order to help reduce infant mortality and improve the lives of pregnant women, identify problem and weak service areas that affect pregnant women and their families. Another sideline goal is to be replicable to other communities. The app involves 3 primary entities: families, staff case managers, and programs and services.

With this overall goal in mind, we find the given designs, workflow and mockup are primitive. It basically consists of 3 primary functions: form intake, fixed decision logic and information presentation. If form data is only to be emailed to staff members, then the app could function properly without back-end server, meaning all 3 functions could be implemented on mobile client side only(no logic and database on back-end server needed), except that we are not sure what Call, Video, Events calendar buttons on Info Session Slide 20 work exactly. Is the Call just a normal telephone call or VoIP call where all callings could be processed in-app? Is the Video just a fixed video clip presentation or VoIP video call? Is the Events calendar fixed or dynamically changed? With former cases, they can be

implemented on mobile client side only; whereas with latter cases, we need logic and database on back-end servers.

We find on Info Session Slide 17&18, the form is designed for tablet devices only, no corresponding form intake design for phone devices.

We find the current decision trees are hard-coded for each program and service. This is not easy replicated to other communities.

We find there is no description about data sources format and how integration with other systems such as Tampa Bay 211.

We find the current designs, workflow and mockup have a lot room for improvement with regard to user friendly UI, functionality, flexibility, scalability and extensibility. We are not saying the current designs, workflow and mockup are not needed, in fact they form a basic primitive where enhancement could be built upon.

If all programs and services are to be fixed, then it is ok to import and hard-code all data about programs and services into the app, and hard-code all decision tree logic in app. It is the simplistic approach with minimal budget and time. however it'd be not easy for replication to other communities.

For flexibility and extensibility, we suggest back-end logic and database server approach. We suggest firstly taking time on data model for family, case manager, and program and service. In this way, we could track and perform data analytics/machine learning in back-end to identify problem and weak service area.

With enough budget and time, we suggest an intelligent text(and/or possibly voice) chat UI instead of current screen/form based UI. This is basically an intelligent chat agent/assistant in much the same way as Siri, Google Now, and Amazon Echo. The decision tree logic is naturally embedded in chat messages with NLP/ML rather than hard-coded in screen/form. This is more user friendly and flexible enough for extensibility. The state-of-the-art natural language processing and understanding is advanced so much nowadays that it is affordable and doable to apply them in everyday apps.

However what we most like about the app concept is its current simplicity and quick implementation. What we most concerned about is the efficient communication with client and budget for replication and enhancement.

If could, we may suggest firstly develop the current screen/form UI, secondly text-based chat UI, and lastly voice-based chat UI, with 2 tabs, one tab for screen/form, another tab for text/voice chat UI.

We also suggest multiple language version the user can switch between at least English/Spanish since they are the most used languages in Florida.

2.2 Other App Projects & Examples

This is our first attempt to work with Hillsborough County and hope so. We have previously developed mobile apps for kids such as MindMap mobile app, and we are currently

providing technical consulting to a hospital and a pharmaceutical company in China so we are gradually entering into health and medical industry.

We have plenty experience in mobile UI/form design, such as AC Panel and 3D Global. In case you want VoIP call and video we discussed earlier, we'd reference the available open source projects. In case you want intelligent text/voice chat agent, there are the 3rd party chatbot and NLP APIs available we can utilize but we probably need to invent our own for maximum accuracy and flexibility. We have extensive knowledge, experience and resource to accomplish the tasks.

2.3 Project Approach

Our approach to the project is to closely work with client to develop the current screen/form based UI first by April 15, 2017. We'd spend at least two weeks on project planning and testing respectively. On project planning phase we'd expect to work with client every day so we need client's close cooperation, using email, skype or slack. The major variables/risks we believe are communication and requirement change. We are in progress arranging a US-based partner to facilitate communicating with client. Ideally we hope this person is in part of HSC and technically participate into project development(actual coding) with us from beginning to end so that he would perform on-site training and continue technical support after project delivery. He will be the immediate contact person from both sides.

Another risk is resource allocation. In case there is an absent developer for any reason, we plan on bringing third party developers immediately. We believe user friendly UI will drive consumer adoption and use.

2.4 Timeline & Budgets

The following is the initial timeline to develop screen/form based UI only. The detailed timeline will be given as a deliverable as a result of project planning phase. We propose ~$30,000 budget within 3 months, plus $10,000 paid to the supposed US-based partner.

Activity	Date	Deliverables	Cost	Notes
Negotiation	by 12/23/2016	initial design, work flow, mockups		clarifying the scope of work, and initial timeline and budget.
Project Kick Start	01/16/2017			
Project Planning	by 01/28/2017	functional spec, detailed spec, project plan(detailed timeline, resource plan, quality plan, risk plan)	$5000	
dev env setup	by 01/28/2017	project repo, CI/CD, etc	^	version 0.1.0
dev and design	by 03/24/2017	wireframes, code, documentation, user manual, training material	$20,000 divided into 8 milestones in 8 weeks	designer, android and iOS development in parallel; agile weekly sprint;
integration testing	by 03/31/2017	integration test report	$5000	
factory acceptance test	by 04/07/2017	test cloud report	^	
cust. acceptance test	by 04/13/2017	test report	^	side line installation
app registration & upload	04/14/2017	Apple store(approval pending), Google Play	$99 + $25	version 1.0.0
Initial Project Closing	04/15/2017		$30,124	
US-based partner			$10,000	
Total			$40,124	

The app version would be structured as <major release>.<minor release>.<bug fix> with initial version 0.1.0 and first major version 1.0.0 for initial project closing.

The development phase is divided into 8 milestones, $2500 for each week. Milestone payment should be completed after deliverables are received and before next milestone begins.

Included in this contract, a $2000 monthly maintenance fee is charged for ongoing technical support and minor bug fixes, with weekly or monthly(agreed by client) minor updates performed by the personnel designated by the vendor, until agreed upon by both parties, or performed by the US based partner, full employed or on contract basis otherwise. Emergency fix is charged with $110/hr/man emergency fee. Separate contract would be initiated for major updates, optimization, enhancements such as text/voice chat UI, and requirement changes, either hourly-based or project-based, based on the kind, scope of the changes. Our normal hourly rate is $55/man.

2.5 Measurement, Analytics, and Ongoing App Improvement & Management

Google Analytics is used for measurement and analytics. We recommend capacity and performance metrics observed by GA, particularly the initial load speed. In case there is an issue with initial load speed or performance, we will work together to solve the problem on hourly contract basis.

User manual, and training and other technical material are delivered as part of this contract. On-site technical capable staff should be able to make necessary updates based on these materials. On-site staff training is charged with $800 per day. Any change involving code re-compiling should be performed by a technical capable person.