

## SI-537 Crisis Informatics

### Group #5 - Crisis Crusaders

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[Link to supporting report for additional information that doesn't fit the page limit](#)

## Group Project Plan Of Action II (POA II)

### Challenge Prompt #5:

*The Head of Operations for a large NGO in Sierra Leone needs to share sensitive data with partner NGOs in order to track Ebola cases and stem a new outbreak of the disease. Speed and simplicity are needed; however, this is among the most sensitive data. What are her options?*

#### 1. Problem Statement

Crisis Crusaders is an international non-profit consulting organization that supports NGOs around the world and is supported by USAID. Our members have worked in several roles at various technological firms before joining Crisis Crusaders. We have been mobilized by the Head of Operations at Charity Health Network<sup>1</sup>, an NGO, to provide support in their mission to mitigate the current Ebola crisis, which is now in the scaling up phase. CHN's current methods of storing and sharing data lack efficiency and security. Crisis Crusaders intends to provide a secure and reliable form of data storage and sharing to CHN that will be compliant with HIPAA regulations and the Data Protection Act<sup>2</sup>.

#### 2. Situation Awareness

	Known	Unknown
Known	Data collection methods established; immediate need for increased data sharing and storage capacity. HIPAA + Data Protection Act regulations. Strong partnership with Charity Health Network, backed by USAID.	Business continuity Data confidentiality during data migration Extent of stigma surrounding Ebola Future uses of our technology solution  (impact is unknown but existence is known)
Unknown	Ebola in general (life course of the crisis, long-term impacts)  (risks)	Regulatory Changes Data Loss  (unfathomable uncertainty)

### 3. Approach or method to the problem

We will be using an agile approach to the project methodology<sup>3</sup>:

- I. *Requirements*: Interview with members of CHN to determine exact processes needed and assess current structure
  - II. *Plan*: Create budget, timeline, communication plan, budget, and overall plan to implement a solution for CHN.
  - III. *Design*: Application design with the client, CHN
  - IV. *Implement*: Create application
  - V. *Test*: Test with one CHN health Center, monitor daily reports
  - VI. *Deploy*: Determine KPIs, metrics, and other reports for CHN
- } *Iterate*

### 4. Assumptions

<b>Crisis Crusaders:</b> <ul style="list-style-type: none"><li>• A non-profit consulting organization that is well known and established (i.e smaller McKinsey) in New York, NY</li><li>• 20 team members with \$10M in funding budget</li><li>• 4 members in the consulting team sent to Sierra Leone (data scientist, information analyst, program manager, PR specialist)</li></ul>	<b>Clients:</b> <ul style="list-style-type: none"><li>• Primary: Head of Operations of Charity Health Network headquartered in Freetown, Sierra Leone</li><li>• 500 employees in the ten centers</li><li>• \$10M</li><li>• Secondary: Managers at CHN's branches; data sharing partners</li></ul>
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- We have strong partnerships with Charity Health Network, other NGOs and health partners in Sierra Leone.
  - CHN currently has ten health care facilities spread out throughout the country<sup>1</sup>.
- Currently, CHN is storing data in excel files throughout their data centers.
- The National Electronics Bill of 2020, designed to implement a comprehensive legal and regulatory framework for telecommunications in Sierra Leone, will be a key driver of our data security features<sup>4</sup>.

### 5. Risk Mitigation

It's important to have risk management to ensure our project's success. Having a communication plan is key, especially in case of downtime or a service disruption. We need strong authentication with encryption and physical security, because data sabotage can happen at any moment. Maintaining the scope is important to mitigate financial risk or client rejection. And finally, we need to monitor and track system usage through metrics to determine if there is storage growth.

### 6. Timeline #1

Milestone	Owner	Mentor	Deadline	Status
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Form diverse team	All		Sep 21	Completed
Select a scenario and meet with mentor, Patrick Gordon	All	Patrick	Sept 30	Completed
Research the topic, technology, NGO rules and flesh out project plan	All	Patrick	Oct 11	Completed
Check-in with Patrick for POA I review	All	Patrick	Oct 12	Completed
POA I due	All		Oct 13	Completed
Prepare high-level budgeting	Maheen		Oct 19	Completed
Prepare people resource plan	Erin		Oct 19	Completed
Prepare second timeline including implementation of the solution, report, and budget	Steph		Oct 19	Completed
Define approach and team roles	Tabbie		Oct 19	Completed
Check-in with Prof. Happ to review previous tasks	All	Ed	Oct 19	Completed
Check-in with Prof. Happ for final POA review	All	Ed	Oct 26	Completed
Develop a risk register and mitigations	All		Nov 2	Not started
Investigate solutions, list pros and cons (+estimated time and costs)	All		Nov 2	Not started
POA II due	All		Nov 5	In progress
Create a proposal write-up and corresponding presentation for the SMT	All		Nov 9	Not started
Send slides to Patrick for review	All		Nov 11	Not started
Prepare presentation and practice with our team and Patrick	All		Nov 16	Not started
Turn in final slide deck and supporting report	All		Nov 19	Not started
Presentations to SMT panel	All		Nov 19	Not started

## 7. Roles\*

- a. Maheen Asghar: Data Scientist/Software Developer
- b. Tabassum Nisha: Information Assurance Analyst/Quality assurance Analyst
- c. Stephanie Mecham: Project Manager
- d. Erin Voichoski: Communications/Public Relations Specialist

*\*Additional role details are in the supporting document.*

## 8. Research

Cloud Hosting	Software Development (Application) <sup>9</sup>
<b>Amazon AWS<sup>7</sup></b> <ul style="list-style-type: none"> <li>• Pricing: Tiered. Over 500 TB / Month - \$0.025 per GB</li> <li>+ Most experienced vendor</li> <li>+ Cheaper with storage only</li> <li>+ Data stored in Cape Town, Africa</li> <li>- Expensive additional services</li> <li>- Less global scaled</li> </ul>	<b>In-house</b> <ul style="list-style-type: none"> <li>• Pricing: \$300,000</li> <li>+ Full control over code and project</li> <li>+ Direct communication</li> <li>- More expensive to hire full-time employees</li> <li>- Much longer timeline</li> </ul>
<b>Microsoft Azure<sup>8</sup></b> <ul style="list-style-type: none"> <li>• Pricing: \$0.058/GB per month</li> <li>+ Cheaper with additional services</li> <li>+ Global scale business</li> <li>+ Data stored in Southeast Asia</li> <li>+ Open resource</li> <li>- Expensive with storage only</li> <li>- Less experienced than AWS</li> </ul>	<b>3rd-party</b> <ul style="list-style-type: none"> <li>+ Easy to scale projects up or down</li> <li>+ Increased efficiency</li> <li>- Costlier</li> <li>- Potential security risks</li> <li>- Inability to customize</li> </ul>
<b>In-house<sup>10</sup></b> <ul style="list-style-type: none"> <li>• Pricing: Hard to estimate due to costs of buildings, infrastructure, human resources;</li> <li>+ Avoid the risks associated with third-parties</li> <li>- Very costly</li> <li>- Time consuming</li> </ul>	<b>In-house + 3rd party</b> <ul style="list-style-type: none"> <li>+ Easy communication between groups</li> <li>+ Not as costly as in-house</li> <li>+ Ability to customize</li> <li>- Could take longer than 3rd party</li> </ul>

#### Final option:

Cloud Hosting	Software Development (Application)
<b>Amazon AWS</b> <ul style="list-style-type: none"> <li>• Since we are focusing on storage as our main aspect, it's a cheaper option than Azure or in-house (on-premise) hosting and our data will be located on a server in Cape Town, South Africa.</li> </ul>	<b>In-house + 3rd party</b> <ul style="list-style-type: none"> <li>• We will work with a mobile app development company to save time on starting up a new app. Our software developers, analysts, and security experts will integrate CHN's data into the app</li> </ul>

#### 9. Budget (Invert CHN and Crisis Crusaders and CHN will make a cost recovery program for costs)

Costs	
Year 1 - Implementation	\$589,890
Year 2 - License fees	\$45,770
Year 3 - License fees	\$45,770
<b>Total</b>	<b>\$681,430</b>
<b>USAID</b>	<b>\$250,000</b>
<b>CHN</b>	<b>\$431,430</b>

Additional budget details are in the supporting document.

## 10. Timeline #2

	Deadline	Phase	Milestone/Deliverable	Key milestone?
Create high-level project plan detailing scope, work breakdown, budget, timeline, communication plan, risk management strategy	Nov 5th 2020	Initiation	Initial project plan complete	
Revise project plan with stakeholder feedback	Nov 11th 2020	Initiation	Revised project plan complete	
Present finalized project plan to SMT team; demonstrate need and feasibility	Nov 19th 2020	Initiation	Project approval & green light to advance to planning phase	Key milestone #1
<b>Conduct needs analysis</b> <ul style="list-style-type: none"> <li>Ensure compliance with HIPAA and Data Protection Act regulations</li> <li>Evaluate user workflows</li> <li>Technical analysis of current infrastructure</li> </ul>	Dec 3rd 2020	Planning		
Finalize pricing model for solution development and IT support; choose Cloud hosting and software dev platforms	Dec 5th 2020	Planning		
Develop prototype	Jan 3rd 2021	Planning	Initial prototype complete	
Testing and obtaining feedback of prototype; deploy phase-one beta to users	Jan 5th 2021	Planning	Beta prototype launch	Key milestone #2
Monthly progress report (benchmarks, budget, challenges, modifications to the timeline)	Jan 5th 2021	Monitoring	Monthly project update to SMT sent	
Secure data-sharing agreements with relevant stakeholders	Jan 10th 2021	Planning	DSA contracts finalized	
<b>Debug and perfect prototype into Beta solution</b> <ul style="list-style-type: none"> <li>Demonstrate compliance with HIPAA, EHR security regulations, Data Protection Act</li> <li>Demonstrate how its meeting the needs listed in initial needs analysis</li> </ul>	Feb 1st 2021	Planning	Revised prototype finalized	
Monthly progress report (benchmarks, budget, challenges, modifications to the timeline)	Feb 1st 2021	Monitoring	Monthly project update to SMT sent	

Conduct trainings for CHN employees / IT help professionals at the pilot clinics	Feb 10th 2021	Implementation		
Migrate existing CHN data into new system & begin collecting new data using this system	Feb 15th 2021	Implementation - Phase 1		
Monthly progress report (benchmarks, budget, challenges, modifications to the timeline)	March 1st 2021	Monitoring	Monthly project update to SMT sent	
Monthly progress report (benchmarks, budget, challenges, modifications to the timeline)	April 1st 2021	Monitoring	Monthly project update to SMT sent	
Conduct real-time testing <ul style="list-style-type: none"> <li>Workflows &amp; user acceptability</li> <li>Data security</li> <li>Offline sync functionality</li> <li>Unexpected challenges</li> </ul>	May 5th 2021 (iteratively)	Monitoring		
Monthly progress report (benchmarks, budget, challenges, modifications to the timeline)	May 5th 2021	Monitoring	Monthly project update to SMT sent	
Debug, modify, improve the data sharing solution to address needs found during monitoring <ul style="list-style-type: none"> <li>Near end of this phase, prepare for final deployment and scale-up</li> </ul>	June 1st 2021 (iteratively)	Implementation - Phase 2		
Monthly progress report (benchmarks, budget, challenges, modifications to the timeline)	June 1st 2021	Monitoring	Monthly project update to SMT sent	
Full system deployment	July 1st 2021	Implementation	Go-live for all users	Key milestone #3
User trainings & data migration	July 10th 2021	Implementation		
Monthly progress report (benchmarks, budget, challenges, modifications to the timeline)	July 10th 2021	Monitoring	Monthly project update to SMT sent	
Monthly progress report (benchmarks, budget, challenges, modifications to the timeline)	August 10th 2021	Monitoring	Monthly project update to SMT sent	
Conduct iterative real-time testing & modifying/debugging	August 20th 2021	Monitoring		
Monitor first quarter system reports and IT issues, budget, success of scale-up, areas of waste for future optimization <ul style="list-style-type: none"> <li>Prepare for further scale-ups or adaptation to different types of disease surveillance</li> </ul>	September 01 2021	Monitoring		Key milestone #4

<b>Modify exit strategy as needed</b> <ul style="list-style-type: none"> <li>• Ensure sustainability post-departure</li> </ul>	<b>September 05th 2021</b>	<b>Closing</b>		
<b>Develop final reports</b> <ul style="list-style-type: none"> <li>• Post-mortem analysis</li> <li>• What still needs to be done</li> <li>• Suggestions for version 2.0</li> </ul>	<b>September 20th 2021</b>	<b>Closing</b>	<b>Final deliverables submitted to SMT, CHN, and other relevant stakeholders</b>	<b>Key milestone #5</b>

## 11. Presentation Slide Deck

1. Title
2. Introduction to Crisis Crusaders, Team Roles - **Erin**
3. Introduction to CHN and Challenge Statement - **Erin**
4. The Ask - **Erin**
  - a. Funding, mandate, problem statement, what we need
5. Assumptions - **Tabbie**
6. Approach (research, options) - **Tabbie**
  - a. Reminder about security/privacy considerations
  - b. Final recommendations
7. Solution - **Maheen**
8. Risk mitigation - **Maheen**
9. Budget - **Maheen**
  - a. Sustainability, cost-sharing
10. Timeline - **Steph**
11. Review The Ask - **Steph**
  - a. Emphasize why we/CHN should do this
12. Questions - **Steph**

## References

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5. Smart Sheet; Agile vs. Waterfall Approach:  
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6. ICRC; Handbook on Data Protection in Humanitarian Action:  
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