GO Pal Emergency Response Plan Mobile Enterprise Application System

Final Report
October 26, 2016

Acknowledgements

Disclaimer

Executive Summary

PTAC and GO Pal Emergency Management Services created an online market assessment survey/questionnaire to clearly identify the problem solution fit of mobile technologies in the petroleum emergency preparedness industry with the support of Alberta Innovates Technology Futures (AITF).

On August 9, 2016, the survey was distributed to various emergency preparedness industry stakeholders, mainly consisting of oil and gas producers operating in Western Canada. Awareness of this study was provided via e-mail and through personal outreach to PTAC members and GO Pal's industry contacts. Additional exposure efforts were made to external stakeholders via PTAC's and GO Pal's LinkedIn pages. We received 16 online survey responses, which included participation from major Canadian oil and gas producing companies. In addition, 9 post survey interviews were conducted with various industry stakeholders who provided further insight to the answers provided on the online questionnaire.

The Problem Solution Fit for GO Pal's proposed development of a mobile Emergency Response Plan Mobile Enterprise Application System (ERP App) was assessed and confirmed the following pain points: costs can be reduced for physical copies of ERPs, document management can become more efficient, communications between field and corporate personnel can be improved, and poor accessibility to ERP manuals can become more easily accessible through the implementation of an ERP App.

The Product market fit for GO Pal's proposed development of a mobile ERP App was addressed during both the survey and interview process through direct inquiries to end users regarding their interest in using an ERP App within their company. We found that 100% of interviewees who were questioned about the value of including an ERP App as part of their emergency preparedness program advised that they see it as a valuable addition. Reasoning provided to support this statistic includes: convenience and value driven features with cross applications to improve emergency response as well as day to day business activities by providing easy access to critical material such as contact information and operational maps. This end-user feedback demonstrates that this product is market-ready, as similar products are proven to be used and deployed in the field, but have not yet reached mainstream usage in the field. Existing products mentioned by five of the interviewees are currently available for purchase. From this study, we became aware that one of the available products is currently being used by two small oil and gas producers.

The Business model fit for GO Pal's proposed technology was addressed through survey and interview processes and we found that approximately 40% of those interviewed for this study were aware of technologies in this space that currently exist. Companies who were aware of available technologies in this space, but opted not to purchase mobile ERP Apps at this time, did so due to high prices and incompatibility of the ERP App with the company's existing global information system and/or other software. Thus, there is still a need to take

the business case for ERP mobile applications to the appropriate channels within oil and gas companies to raise awareness and inform. We were informed by this study that the process for purchasing this type of application requires approval from several internal levels and varies per company, but 100% of interviewees indicated that their company would allocate budgets towards the installation and implementation of an ERP App if the business case existed. For example: During our conversations with one company, we were advised that the approval and purchasing process of an ERP App would require approval from a technology management group within their organization, must be applicable to all POS's (Principal Operating Subsidiary), may require sign-off from the Vice President of operations for health and safety, and likely would involve their IT committee group as well as their Crisis Management Team. The Health and Safety Manager at another company advised that he was the one who vetted and approved their ERP App on behalf the company. The process for yet another company involves IT, security group, and business group review before taking the matter to the executive Vice President level for approval. The purpose of all these steps for approval is to ensure the safety of the App, confirm that it meets company standards, and assess whether or not the product is actually needed prior to going through budgeting personnel. Lastly, one other company advised that this type of technology would be taken to their emergency response group.

Client branding was assessed during the interview process and our results varied. Approximately 40% of companies advised that they would prefer and pay extra for personalized company branding, while others indicated that company or service provider branding was not a priority or that an alternative solution could be used.

This market assessment confirms that the pain points that GO Pal's ERP App aims to solve currently exist among industry and that technologies related to emergency management could improve public confidence in the petroleum industry's emergency response programs. The study also provided GO Pal with valuable information to develop their business model and potential product to align with industry needs.

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1. Introduction

This report accounts the product-market fit and business-model fit study by PTAC Petroleum Technology Alliance Canada and GO Pal Emergency Management Services (GO Pal) in collaboration with Alberta Innovates Technology Futures (AITF). The study took place from June to October 2016.

The purpose of this study was to complete a market assessment on GO Pal's conceptual idea for an Emergency Response Plan (ERP) Mobile Application (App) by collecting industry feedback to determine if there is merit to develop the product for use by the Canadian Oil and Gas Industry. The project proceeded with the following steps:

- Assessment of Problem-Solution Fit with a number of oil and gas industry organizations
- Assessment of the product market-fit of mobile ERP applications among oil and gas industry stakeholders
- Assessment of the business model fit of ERP mobile applications among oil and gas industry stakeholders
- Assessment of the market readiness of and ERP mobile application technology for industry use
- Inquiry to industry stakeholders regarding the value of client branding for the ERP application
- Definition of the minimum viable product for initial design, production, and commercialization of the ERP application technology.

Through questionnaire feedback and interview participation from the oil and gas industry, PTAC and GO Pal became more informed about the information outlined in the bullet points above. We gained insight into some of the most common issues associated with the use physical copies of ERPs versus mobile application technologies. We learned about some of the existing companies who are currently developing and selling technologies and services in the emergency management space, which provided insight into the market readiness of such products, and received specific stakeholder feedback to be used for the future development of GO Pal's ERP App.

PTAC is a not-for-profit organization that facilitates collaborative research and technology development to improve the financial, environmental and safety performance of the Canadian hydrocarbon energy industry. PTAC, in collaboration with GO Pal, facilitated this Project through its network of oil and gas operators to retrieve invaluable feedback and opinions in the emergency management space.

2. Background

PTAC provides services to small and medium size technology innovators through a number of mechanisms such as meetings to discuss new technologies and their potential

applications, workshops to identify market needs and Technology Information Sessions to disseminate information to industry about new opportunities. Occasionally, these services take the form of a formal project, which results in writing a final report. For example, in 2015, PTAC completed the "Heavy Metal Recovery Study" for the small company entitled "Energy Science and Technology". However, while PTAC provides services to technology innovators, PTAC's main mandate is to convert these services into funded technology development projects with industry participation and sometimes government participation. For example, in 2015, PTAC launched approximately 50 projects several of which included participation by small and medium size technology companies.

This study is in the context of work by PTAC, GO Pal, and industry feedback obtained by dissemination of new, potentially beneficial, technology information for the oil and gas industry through PTAC's broad network. Emergency management is a necessity for all oil and gas workplaces and it is imperative that all company employees are able to quickly access their company's ERP in an emergency situation so that they can respond accordingly. Based on 2016 business associate data obtained by the Alberta Energy Regulator (AER), there are a total of 1,419 exploration and production companies who have their operating status listed as "active" in Alberta; Thus, demonstrating a need for emergency response planning that is easily tracked, accessible, and implemented to benefit oil and gas company employees, regulators, and the general public. Mobile application technologies and digital versions of ERPs exist and are used among industry, but have not yet become a standard or norm for the majority of oil and gas companies. It is important to retrieve industry insight to ensure that the technologies being developed in this space will take into account what the oil and gas operators want and need to implement effective emergency response procedures.

GO Pal's ERP App is one of many potential tools that could impact emergency response protocol and lessen the impact of an incident. Thus, there is value in shaping these tools into viable solutions for the benefit of industry prior to the prototype stage to ensure that technologies will generate interest for future use.

3. Objectives

The overall objective of this market assessment study is to gather feedback and expert insight into some of the issues and pain points as well as the benefits and gains of existing emergency response plan based feedback from oil and gas industry workers. The feedback is to be used in support of creating a prototype mobile ERP App by GO Pal for industry use and therefore result in emergency response benefits for oil and gas companies, regulators and the general public who is sometimes directly involved or affected by oil and gas company incidents.

3.1 Objective 1: To assess the following pain points to compare and validate the need for the development of a new ERP App by GO Pal:

- **High costs:** High cost of publishing, printing and maintaining large numbers of paper binders;
- **Difficult document management process:** Several paper binders become quickly out of date and inaccurate information may be used in emergencies when information changes between binder updates. During an emergency situations, it is required by regulations that all key emergency response actions must be tracked and time stamped which often gets overlooked and mismanaged by company employees;
- **Poor mobility / retrieval and communicating key ERP information**: Difficulty and time wasted accessing large paper binders in remote field based emergency situations. Paper manuals are known to be especially bulky, complex and difficult for responders to search, retrieve and share key emergency response information in order to effectively respond to an emergency;
- **Lacks social licensing value / low public confidence:** Poor industry and company image of using archaic technology for public safety and environmental protection. With the present downturn market conditions affecting the petroleum industry, there is growing public concern about the capability of companies to respond effectively to an emergency given minimum staff and emergency response equipment / resources available.

3.2 Objective 2: To validate the proposed benefits below using oil and gas company feedback on ERP technologies:

- **Lower costs:** Reduced costs for producing and maintaining paper records of ERP documentation and potential for lowering company insurance premiums.

- **Simplified document management process:** The ERP App has the ability to have all ERP information updated to all users instantaneously and has the ability to track and time stamp key emergency response actions by responders allowing for a much more efficient document management process.

- **Improved emergency response efficiency / Mitigation of risks and impacts:** Faster response time and improved efficiencies due to the ERP App's ability to make critical emergency response guidelines and protocols easy and readily available to all employees in a way that also minimizes communication gaps that presently exist within Field and Corporate Emergency Response Teams through the ERP App ability to communicate status updates in real time.

- **Increased social licensing and public confidence:** Companies subscribed to the ERP App will be able to effectively demonstrate that they are utilizing the latest in technology to ensure they provide the best protection available for the public and the environment. This will increase public confidence as the value of mobile applications is relatable and tangible. It will also demonstrate to the public the company's direct investment to a

core value of their business by going above and beyond meeting the bare minimum in public safety regulatory requirements.

The market assessment study achieved the points outlined in objectives 3.1 and 3.2 by interpreting feedback of oil and gas industry stakeholders. The issue of high costs for maintaining physical ERPs was assessed through the questionnaire and interview processes and from the questionnaire, we received approximate cost estimates of what oil and gas companies currently spend on their existing ERP programs. The results are shown in figure 1 below:

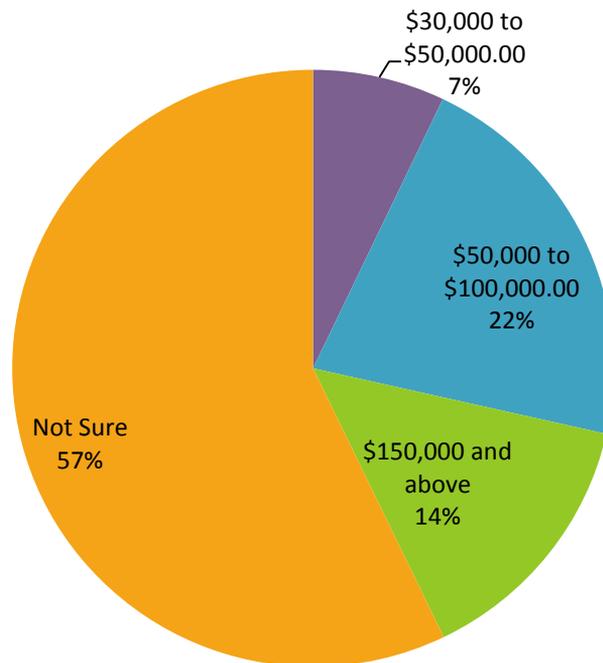**Figure 1: Annual Company Amount Spent on Emergency Response Programs**

Figure 1 shows an array of costs annually allocated for various company ERPs, but does not necessarily indicate that higher or lower annual costs are linked with using physical ERP copies or mobile ERP Apps. Figure 1 shows that there is a level of uncertainty among end users, who participated in the questionnaire portion of the study regarding annual ERP allocated costs. This uncertainty was further validated during the interview process. Although the contacts we interviewed were either directly or fairly involved with their company's emergency response program, it was difficult to extract detailed financials regarding their company's ERP. However, during an interview with a company who currently uses an ERP Mobile App, we obtained validation that costs can be reduced by implementing mobile application technologies in place of ERP binders. The contact interviewed from this company advised that their company's annual costs were cut by approximately $15,000 one year after implementing mobile ERP App use within the company; though savings were not credited to be solely from the impact of implementing

an ERP App, but also from changes to the company processes for Emergency Response Management.

The issue of document management and uneasy access of physical ERPs was a constant topic of discussion during the interview process. Of those interviewed, 90% of companies who currently use ERP binders advised that updating physical ERP manuals was inefficient, time consuming and could result in miscommunication. The other 10% of those interviewed highlighted the importance of issues such as understanding the integrity of their assets and the ability to access ERP information access in remote locations. The majority of interviewees advised that they saw value in having access through a mobile application technology within their company rather than having to refer to a physical copy.

The questionnaire showed that the majority (approximately 80%) of industry who partook in the questionnaire advised that they updated physical copies of their emergency response plan once a year. In regards to usage of their physical emergency response plans, only 27% of industry who partook in the survey advised that they use them quite often – the remaining 73% advised that they either use it "once in a while" or "rarely use it". This indicates that there is room for improvement to increase the amount of usage of these emergency response manuals. From the survey we can conclude that the majority (75-100%) of oil and gas company employees use company smartphone devices and therefore usage of ERPs and familiarity with ERPs may increase among employees if available in mobile application form. When asked if having a mobile application ERP option would increase usage and overall satisfaction of the end user, 57% of questionnaire participants answered 'yes' demonstrating the intrigue in using a technology similar to what GO Pal proposes to develop.

4. Project Results

4.1 Methodology
The market assessment study proceeded in 7 tasks as follows:

- Task 1 – Initial Strategy Meetings: Discussion between GO Pal and PTAC, with insight and support from AITF, to create the market assessment project timeline and define objectives of the study.
- Task 2 – Compilation of PTAC Industry Contacts: Careful organization of PTAC network contacts to be included in the distribution for a questionnaire directed towards oil and gas industry workers with knowledge in the emergency response management space.
- Task 3 – Preparation of Online Survey: Completion of a collaborative peer review process between PTAC, GO Pal, and AITF to draft a questionnaire. The final version of the questionnaire contained 22 questions. Questionnaires were then distributed to industry contacts via email and requested to be filled out.

- Task 4 – Conducting of Industry Interviews: Inquiry about participating in an interview process was included in the Questionnaire from Task 3. The purpose was to ask those who agreed to participate, based on their questionnaire response, more in depth market assessment questions to provide more detailed insight for the study.
- Task 5 – Update GO Pal's Preliminary Business Model Canvas
- Task 6 – Technology Information Session: *This event is planned to be held before the end of the second 2017 quarter.*

4.2 Task 1: Initial Strategy Meetings

PTAC and GO Pal met several times to establish the best approach to conducting interviews and generating a survey that would be realistic for operators to fill out on their own time. GO Pal developed an excel spreadsheet schedule outline for the project team to follow and regular emails were sent, meetings and conference calls were held to appropriately outline the objectives of the study.

4.2 Task 2: Compilation of PTAC Industry Contacts:

PTAC completed its due diligence by searching for emergency response specific contacts within its network. PTAC previously had a health and safety committee, but they were mostly involved with driving safety issues. Following searches in PTACs existing network, we concluded that PTAC did not have specific emergency response contacts, so we opted to request producer member companies for their emergency response representatives to participate in this study. This proved to be successful as we received feedback and input from several industry contacts who classified themselves as either directly or fairly involved with their company's ERP programs. Additionally, GO Pal reached out to several ERP specific contacts to participate in questionnaires and interviews and valuable information was provided.

To reach out to other interested parties beyond personal outreach, Additional exposure efforts were made to external stakeholders via PTAC's and GO Pal's LinkedIn pages, which allowed us to receive voluntary feedback and information on existing companies working in the emergency management space.

4.3 Task 3: Preparation of Online Survey

The construction of the questionnaire, which was distributed to industry on behalf of PTAC and GO Pal, was conscious of in-kind industry availability and thus, involved a number of revisions before settling on the final version. Revisions took into account input from GO Pal, AITF and PTAC to structure questions, make the survey user friendly, and ensure that questions aligned with market assessment study objectives. As mentioned above, industry was contacted via email to distribute this survey. Below are figures which highlight statistics extracted from questionnaire results.

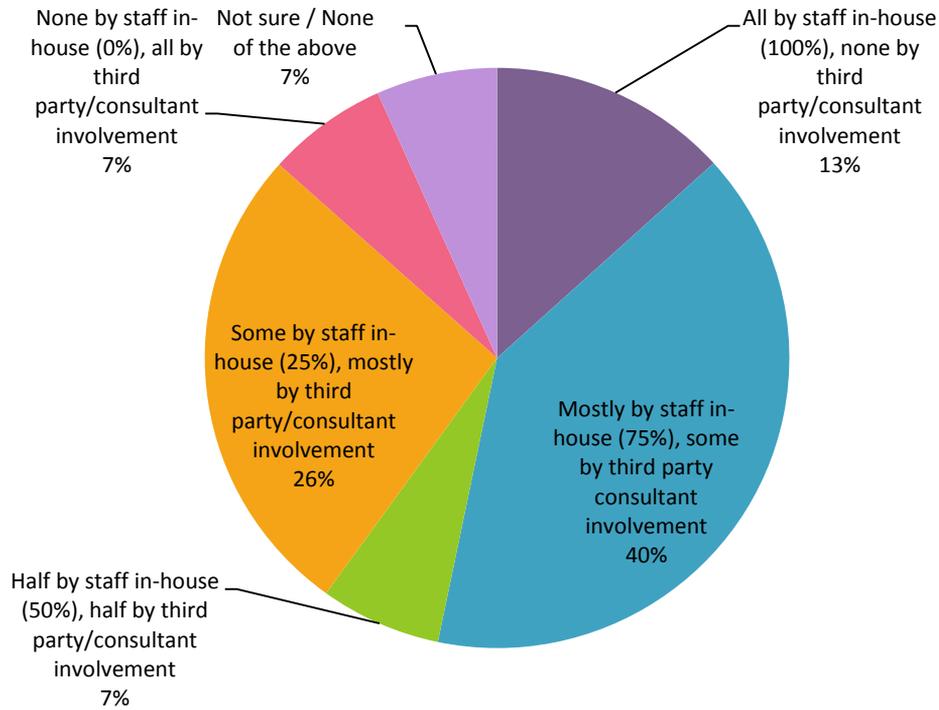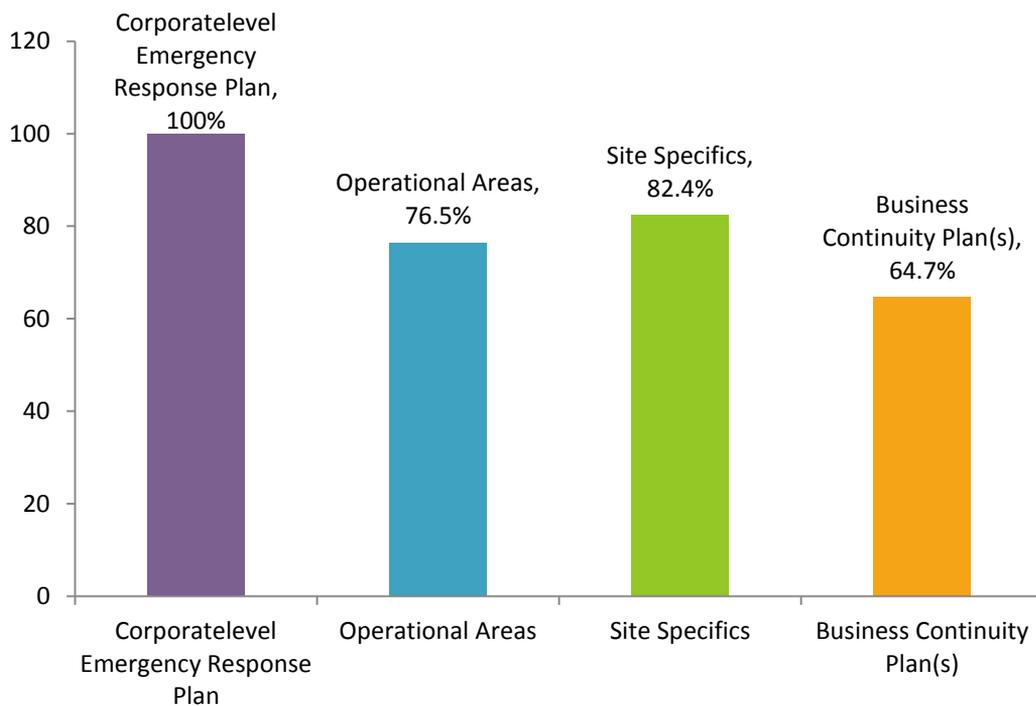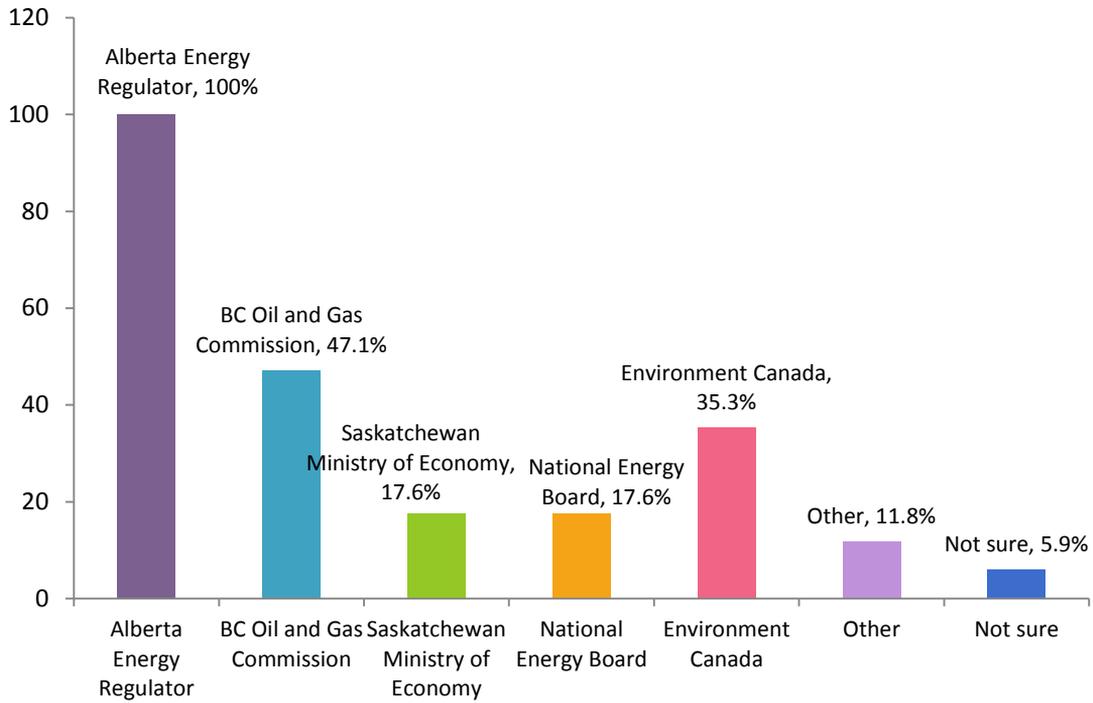**Figure 2: How Companies Presently Manage their ERPs**

Figure 2 provides insight into how many companies currently use third party or consultant services to conduct their emergency management needs. Therefore, this assesses the market readiness for bringing in a mobile application technology to present to end users in the oil and gas industry.
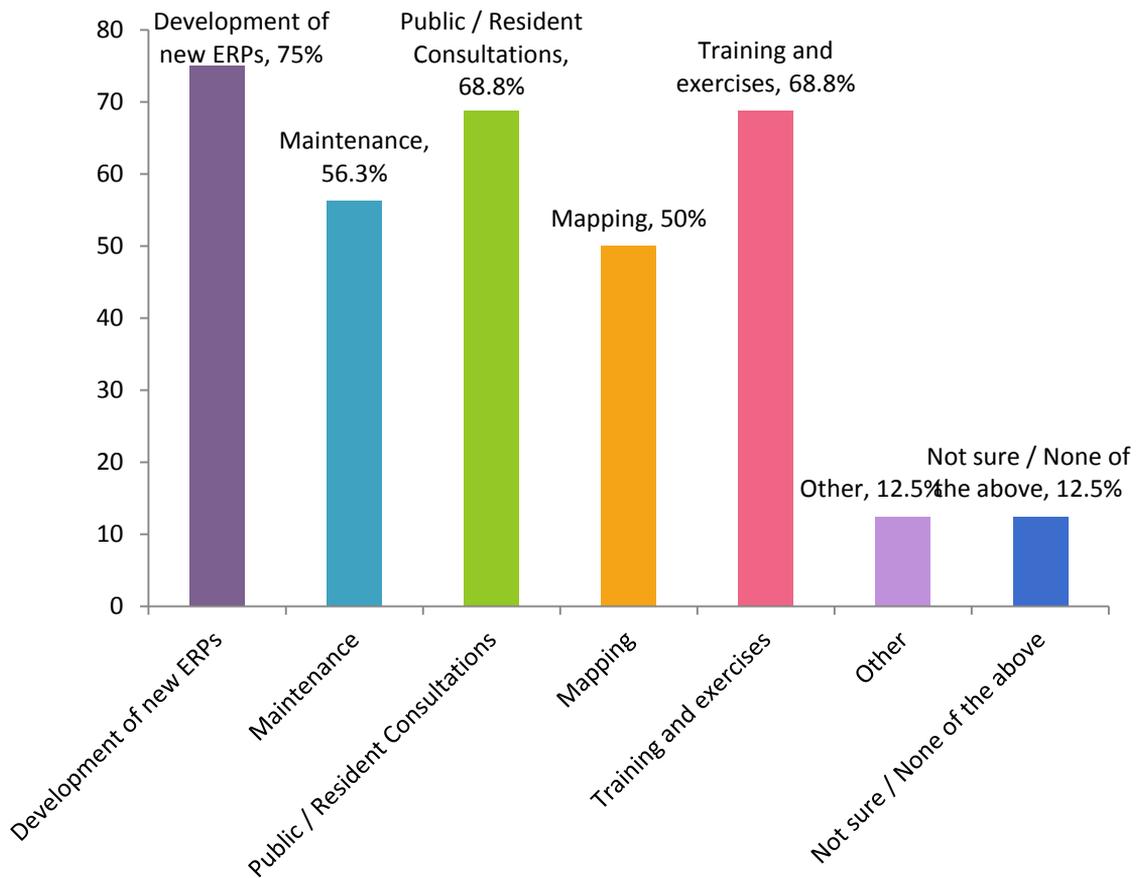
Figure 3: Types of ERPs Oil and Gas Companies Currently Have in Place

Figure 4: Regulatory Agencies with Regulations Applicable to your ERPs

- Alberta Energy Regulator, 100%
- BC Oil and Gas Commission, 47.1%
- Saskatchewan Ministry of Economy, 17.6%
- National Energy Board, 17.6%
- Environment Canada, 35.3%
- Other, 11.8%
- Not sure, 5.9%

Figure 5: Third party / Consultant Services Provided to Industry

- Development of new ERPs, 75%
- Maintenance, 56.3%
- Public / Resident Consultations, 68.8%
- Mapping, 50%
- Training and exercises, 68.8%
- Other, 12.5%
- Not sure / None of the above, 12.5%

Figures 3, 4, and 5 contribute to defining the foundation for an ERP application technology. The results from these figures are useful to GO Pal because they help define the minimum features that oil and gas operator need in their ERP Apps. Figure 3 is representative of the current types of emergency response plans being implemented in the oil and gas industry, which can be used to help GO Pal prioritize mobile app areas of development. Figure 4 highlights the main regulatory bodies whose acts and regulations need to be abided by to create an acceptable emergency response program. Lastly, Figure 5 shows the current emergency management work being provided to end users by third parties/consultants. GO Pal can assess these services and use them to mimic and enhance services to provide producers with what they need.

Figure 6: Payment Option Most Preferred by your Company for an ERP App
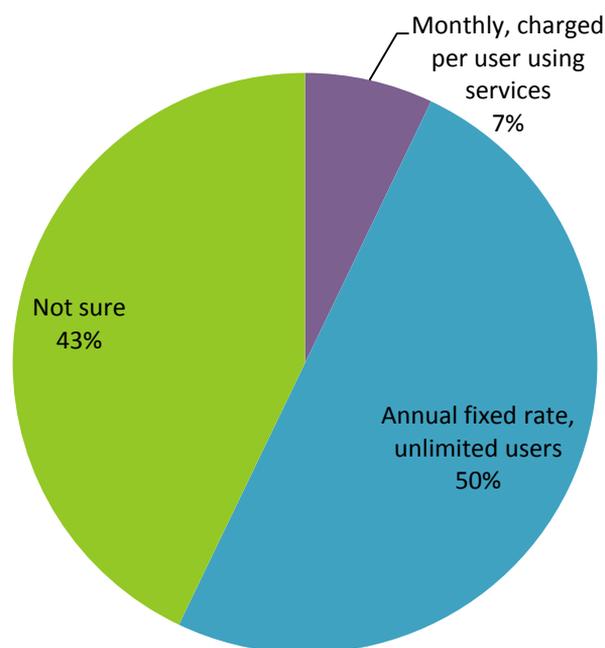
The intent of Figure 6 was to determine how best to present the mobile ERP App technology to companies for purchasing. The results show that 50% of those who took the survey believe their companies would prefer an annual fixed rate, while many were unsure of what their company's preferred method of payment would be. A small amount of those surveyed indicated that monthly charges would be favoured. Due to the 43% of uncertain answers to this question, a variation of the question was included in Task 4 to obtain additional insight into company procedure and preferences when purchasing a technology in this space.

The full questionnaire can be found in the Appendix A of this report.

4.4 Task 4: Conducting of Industry Interviews

During the interview process, detailed information on existing emergency management issues was extracted. We received industry opinions on the potential value of mobile ERP Apps, advice on essential features to include when creating an app, branding preferences for the technology, and budgeting for this type of technology and the emergency management space. The majority of contacts who participated in the interview process were oil and gas operator employees who did not currently have any sort of digital ERP technology in place. From their results, we found that the one of the biggest issues for workers was the manual labor required to update ERP documents on a constant basis to keep them current and accurate. ERP updates are required for resident information, internal staff contact information, site information, and changes to operational assets; Thus, it is crucial that these records are currently and consistently updated. Other noted issues with existing company ERPs included: lack of accessibility to ERPs in the field, high costs for production of manuals and training, and ineffective communication among company employees during emergencies.

Interview responses indicated that mobile ERP Apps are not well known throughout industry. Approximately 40% of interviewees had not thought about using an ERP app before, but to provide perspective, this question was only asked to 5 individuals working in the oil and gas industry. All interviewees who did not currently have mobile ERP applications in place at their respective companies thought that implementing a mobile ERP App would be valuable to their emergency management programs; particularly for operations, reporting, and information accessibility.

When asked for input as to how a smartphone ERP App should function, industry stakeholders advised that the following features should be included:

- Ability to update all employee ERP Apps at the same time to eliminate communication gaps
- Access of emergency response procedure information for everyone using the ERP App
- Address book
- Status board for displaying communications and operational maps with assets and resident information
- User friendly and logical setup with a search feature for quick reference
- Ability to operate offline in areas with poor coverage (i.e. ability to work without internet connectivity)
- Security push notifications to all alert all emergency responders of emergency situations
- Confirmation notifications from responders when they are ready to respond
- Secure technology to accommodate company privacy restrictions
- Ability to communicate between responders

- Access to responder roles and responsibilities
- Information on evacuees. (Location and assistance options to help get people to safety: An interactive map to tell you what people involved in the incident and provide their contact information). The basic minimum would be: The where, who and what
- Daily reporting to feed into an IP
- Compatible software that will work with the existing company software of a customer

When asked about ERP App branding preferences, responses were inconsistent. Approximately 40% of stakeholders who were asked this question advised that they would prefer a "white label approach" where the ERP App would be re-branded to represent their company. One stakeholder specified that they would pay extra for this feature. Others advised that this feature was not a priority and that either displaying the service provider's branding or their company's branding would be acceptable. Some interviewees also noted that employees who would be more involved in the decision making process may have a different opinion on this matter versus their assessment during these interviews.

It was difficult to identify a consistent trend for the approval process for purchasing technologies like GO Pal's mobile ERP App, as the process varied with each company interviewed. Overall, the generic purchase process for an ERP App was for a "product champion" within the company to present the business case for the technology to upper-level management for approval. Most interviewees advised that they would not be part of the main decision-making team for the purchase of this type of product, but they did provide insight from the perspective of the product-user, which clarified features that the technology should entail. We received some insight into the preferred pricing model of companies: One interviewee advised that their company would prefer a fixed flat rate per user fee, while another advised that their company would prefer an annual fixed fee for the purpose of making budgeting easier. As displayed in Figure 6 for comparison, 50% of questionnaire participants indicated that, regarding billing and payment options for the ERP App, companies would prefer an annual fixed rate and unlimited users. When asked about who has the authority to make purchasing decisions within each interviewee's company, generally answers concluded that the 'emergency management team' within each organization would play a large role in the approval and pitching of an ERP App and that the process would be complicated and require multiple levels of assessment and approval, though overall the detailed answers differed.

Those who were interviewed and did not have mobile ERP applications in place and advised that they believed their company would allocate current budget to the installation and implementation of an ERP App.

Two contacts were interviewed who already had mobile ERP App's in place at their respective companies. Their experience with similar technologies to GO Pal's proposed mobile ERP App provided insight into where there could be improvements in the development stage of the App and the available features on the technology currently being used by their company. Both companies are currently using emergency response services from a commercially available ERP product, which provides effective communication capabilities, easy access to key contact information, and reduces the amount of paperwork following an incident. There was minimal criticism of the ERP App that these companies were using, but one of the interviewees did advise that "form-filling" and the "checklist" could be improved by providing more space to include written information.

Lastly, GO Pal interviewed an organization that assists clients in developing emergency management and response programs. During the interview, the organization identified that the biggest challenges their clients have with the development and maintenance of their emergency response plans as the following:

- Maintaining currency of their Emergency Response Plans (especially with the volatility of the market having staff changing constantly);
- Safety & due diligence issues from having field workers assigned to multiple roles
- Costs are the number one issue for clients. Small companies may not currently see value in an ERP App, but mid to large size companies may see value depending on the mitigation of risk it provides.

Following all interviews, it was determined that sufficient interest exists to hold a Technology Information Session (TIS) or focus group meeting to further discuss the content and potential development of GO Pal's ERP App.

4.5 Task 5: Update GO Pal's Preliminary Business Model Canvas

Following Tasks 3, 4, and 5, survey and interview results were tabulated and trends were identified providing valuable feedback on GO Pal's mobile ERP App, which helped identify areas where GO Pal's business plan structure needed to be adjusted based on findings from the study. Go Pal's "Business Model Canvas" includes information obtained from this study on Key Partners, Activities, and Resources, Value Propositions, Customer Relationships, Customer Segments, Channels, Cost Structure, and Revenue Streams. The "Business Model Canvas" is fully displayed in Figure 7 below.

Figure 7: GO Pal Business Model Canvas

The Business Model Canvas

Designed for:	Designed by:	Date:	Version:
GO PAL Services Ltd.	**Ashok Venugopal**	**10/31/16**	**1.1**

Key Partners

- **Investors (i.e. Oil & Gas companies)**
- Emergency Response Consultant Companies
- Software / Cloud developers (i.e. IBM)
- Start up agencies / Post Secondary Institutions

Key Activities

- **Development and Maintenance of App**
- **Research & Development**
- **Marketing & Networking**

Key Resources

- **Superior User interface**
- **Intellectual property**
- **Scalability**

Value Propositions

- **More effective emergency response**
- **Lower costs and easier document management process w/ with ERPs**
- **Improved social licensing**
- Niche product
- Additional revenue stream for company w/ minimal investment

Customer Relationships

- **Flexible & Easy relationships**
- Easy relationships to attract new business

Channels

- **Direct Sales Reps Oil & Gas Companies**
- Oil & Gas Emergency Response Consultant Companies

Customer Segments

- **1419: Western Canadian Oil & Gas Companies**
- 11 Albertan Oil & Gas Emergency Response Consultant Companies

Cost Structure

- **App planning & development**
- **Server maintenance**
- **Developers (i.e. Engineers)**
- Marketing and networking

Revenue Streams

- **ERP App services (Initial Enterprise Core ERP App development: $35k / Initial Site Specific ERP App development: $15k per operational area / Annual Core / Site Specific ERP App Maintenance:$18k for Core and $5k per Site Specific)**
- **Training services: $100 per hour**

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4.6 Task 6: Technology Information Session

Due to interest expressed following the interview process in Task 4, a Technology Information Session is tentatively planned to be held before the end of the second 2017 quarter.

5. Project Benefits

This study provides GO Pal, a SME service provider to the oil and gas industry, direct developmental feedback on their proposed ERP App product from oil and gas operators and other industry stakeholders. Through public dissemination of report results, this study will also provide feedback to other developers of related technologies and provide all service providers with the opportunity to improve their technologies prior to commercialization. Additionally, the dissemination of results to industry stakeholders raises awareness of the technologies being developed for emergency management in the oil and gas industry. The long term benefit will be to improve emergency management programs throughout the oil and gas industry by implementing efficient and technology savvy mobile ERP applications.

6. Conclusion

The focus of this market assessment was to help GO Pal develop a value driven, cost effective ERP App compatible with smartphones and tablets to allow for immediate ERP information access for employees at various site locations.

Industry contacts were assembled with emergency management in mind; all end user contacts who eventually participated in the study classified themselves as fairly or directly involved with emergency management.

Survey results helped to shape interview questions to get the most valuable information for the next stage of the project. Survey results also provided statistics for review and consideration by GO Pal on the audience partaking in the survey, the types of ERPs currently being used by industry stakeholders, the company management strategies for emergency response work, the current use of consultants for emergency response work, indicated areas of improvement regarding existing ERPs, the current usage of existing ERPs by employees, smartphone user capabilities among companies, budgeting and payment preferences. From the survey, we received 6 interview contacts that were willing to participate in a more in depth conversation regarding emergency response technologies.

The interviews provided more details into specific company ERP needs, ideas for improvement and functionality, cost, marketing strategy, and most importantly the current demand to have mobile ERP applications in place at various companies in the oil and gas industry. These interviews provided indication that there is interest among industry to hear more about this type of technology and also budget available to be allocated towards it, if the technology satisfies company needs.

The key takeaways from this market assessment study are confirmation that a need for emergency management solutions in the oil and gas industry exists, particularly to address problems associated with ERP binders, and also realization that competing technologies in this market are already commercially available. We now understand that the proposed GO Pal product is not revolutionary, but that there is room for improvement in this area of technology development. We also found that preferences for product purchase will help GO Pal's decide on their business model development by determining their targeted end user and what services they plan to offer, such as: A standalone app, emergency response consulting services for using mobile apps, or a combination product bundled with consultant services. Determining this business model direction will ensure that GO Pal contacts the appropriate partners to work with. GO Pal's Business Model Canvas is the starting point for future business development.

GO Pal used the information collected in this study to update and refresh their business plan to align with industry needs and create the most useful product possible. Next steps for GO Pal will involve the design of an App and preliminary business model that is superior to existing solutions.

Appendix A: Questionnaire Results Report

Survey Title: MOBILE APPLICATION STUDY - EMERGENCY PREPAREDNESS & RESPONSE FOR THE WESTERN CANADIAN PETROLEUM INDUSTRY

Response Statistics

	Count	Percent
Complete	18	100
Partial	0	0
Disqualified	0	0
Total	18	

Does your company have Emergency Response Plan(s) in place for their operations?

No (*Note: If the
answer is no, the
stud
6%

Yes
94%
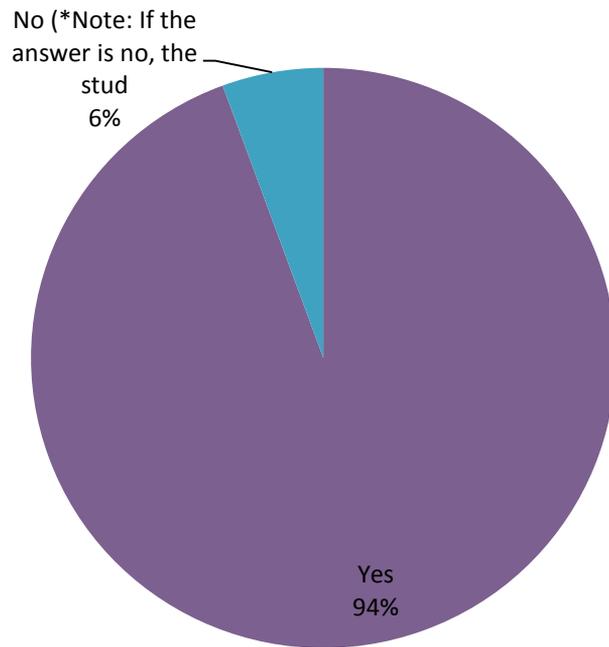
Value	Percent	Count
Yes	94.4%	17
No (*Note: If the answer is no, the study is complete as the remaining questions are only applicable to companies who have Emergency Response Plans. Thank you for your time.)	5.6%	1
	Total	18

How would you best describe your involvement in your company's Emergency Preparedness & Response Program?
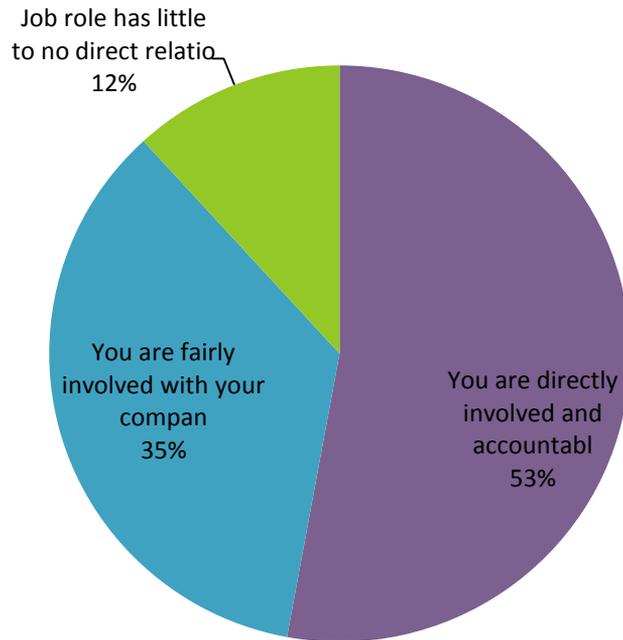
Value	Percent	Count
You are directly involved and accountable for your company's Emergency Preparedness & Response program (i.e. an Emergency Response Planner).	52.9%	9
You are fairly involved with your company's Emergency Preparedness & Response programs, but not as your primary responsibility (i.e. Operations Manager).	35.3%	6
Job role has little to no direct relation to the Emergency Preparedness & Response program with minimal accountability for program delivery. (i.e. Junior Accountant)	11.8%	2
	Total	17

What types of Emergency Response Plan(s) does your company currently have in place? (Select all that apply to your company)
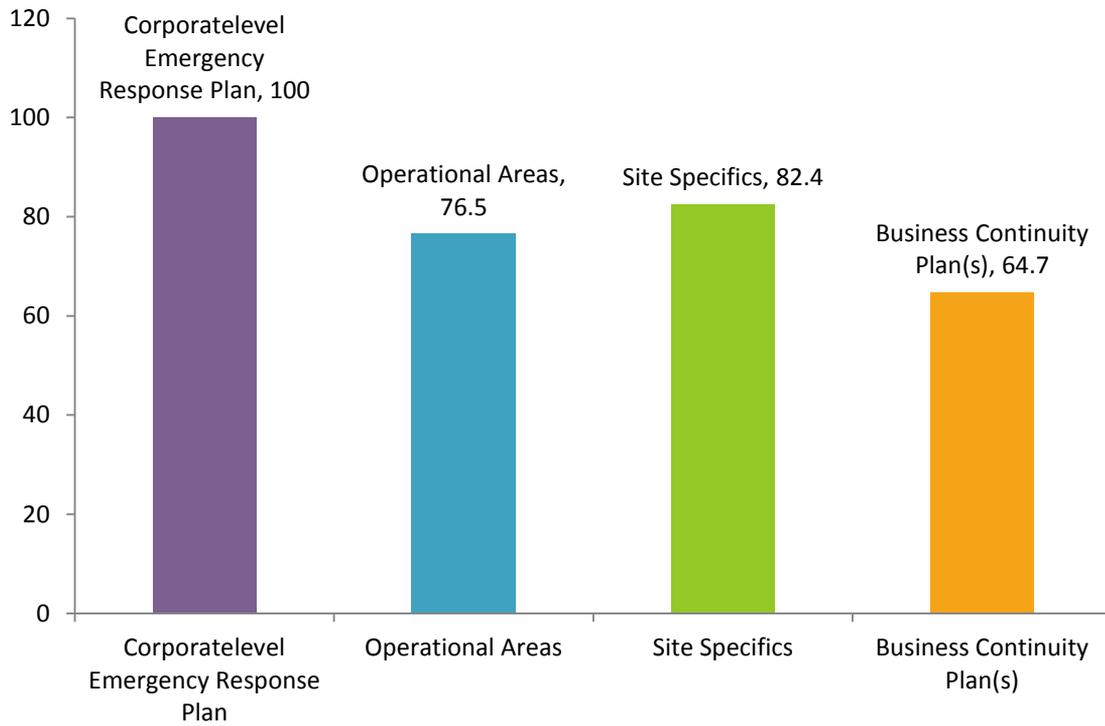
Value	Percent	Count
Corporate–level Emergency Response Plan	100.0%	17
Operational Areas	76.5%	13
Site Specifics	82.4%	14
Business Continuity Plan(s)	64.7%	11

Statistics	
Total Responses	17.0
Hidden	1.0
Skipped	0.0

What regulatory agencies have Emergency Preparedness and Response Regulations applicable to your Emergency Response Plans? (Select all that apply to your company)
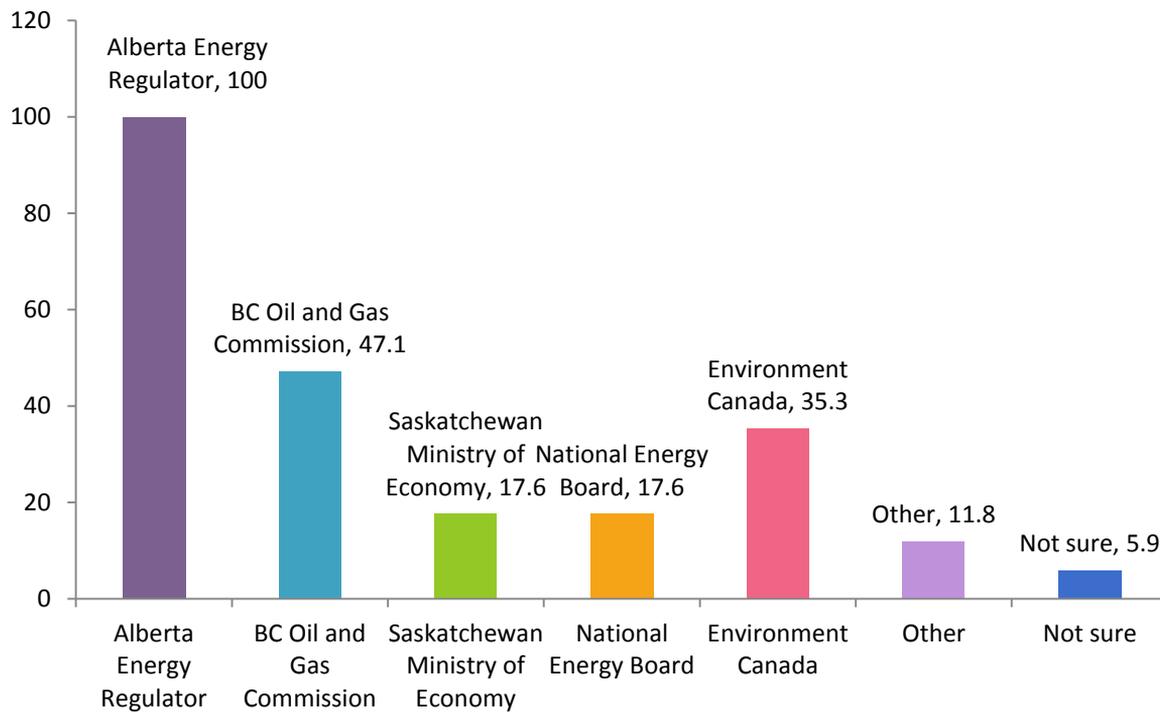
Value	Percent	Count
Alberta Energy Regulator	100.0%	17
BC Oil and Gas Commission	47.1%	8
Saskatchewan Ministry of Economy	17.6%	3
National Energy Board	17.6%	3
Environment Canada	35.3%	6
Other	11.8%	2
Not sure	5.9%	1

How does your company presently manage their Emergency Preparedness & Response Programs? This includes developing and updating Emergency Response Plans and conducting training and exercises.
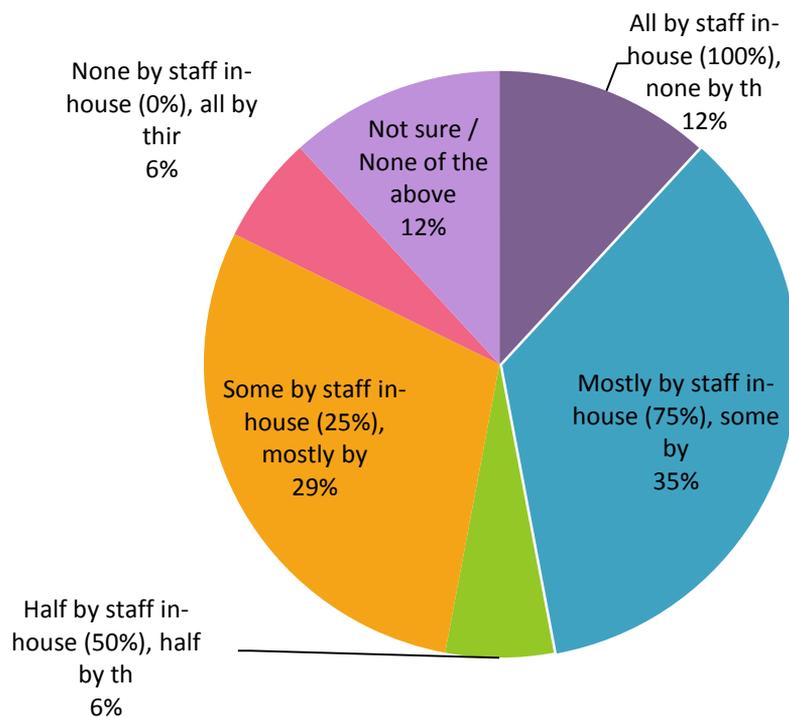
Value	Percent	Count
All by staff in-house (100%), none by third party/consultant involvement (0%)	11.8%	2
Mostly by staff in-house (75%), some by third party/consultant involvement (25%)	35.3%	6
Half by staff in-house (50%), half by third party/consultant involvement (50%)	5.9%	1
Some by staff in-house (25%), mostly by third party/consultant involvement (75%)	29.4%	5
None by staff in-house (0%), all by third party/consultant involvement (100%)	5.9%	1
Not sure / None of the above	11.8%	2
	Total	17

If your company presently uses third parties / consultants, what services do they provide? (Select more than one option if applicable to your company)
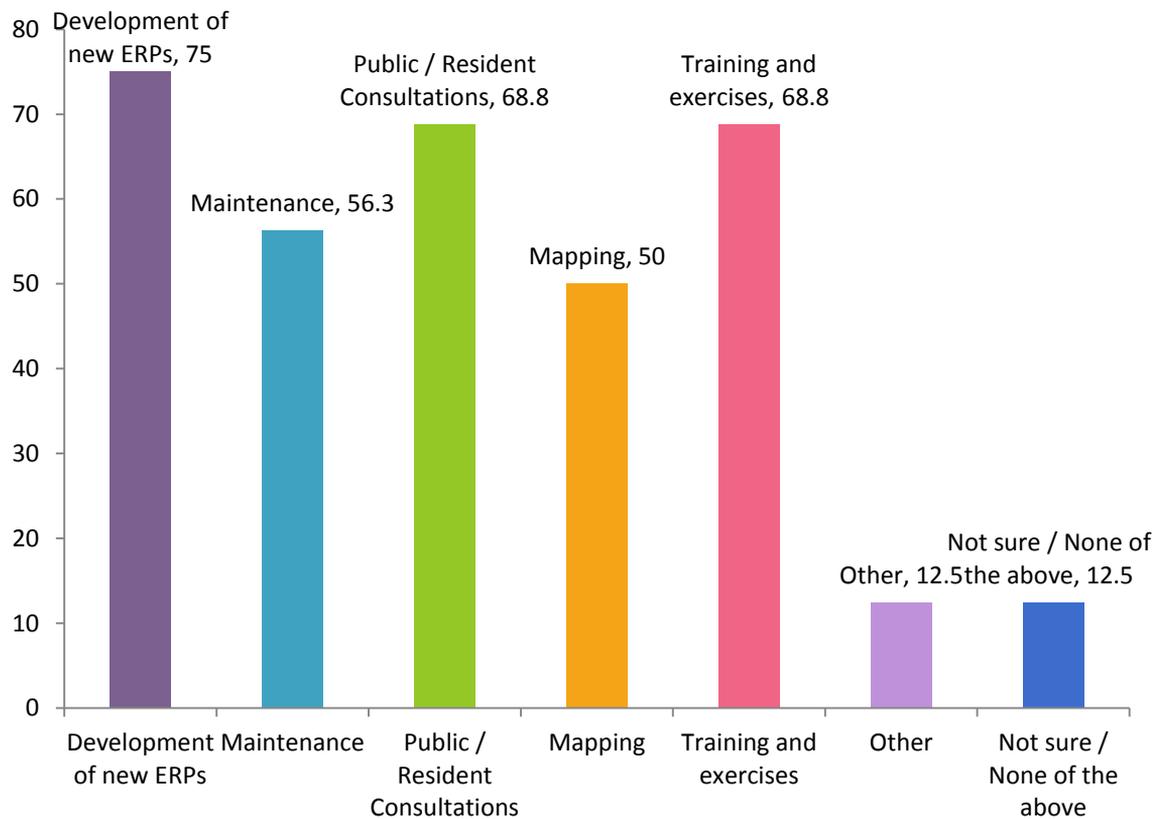
Value	Percent	Count
Development of new ERPs	75.0%	12
Maintenance	56.3%	9
Public / Resident Consultations	68.8%	11
Mapping	50.0%	8
Training and exercises	68.8%	11
Other	12.5%	2
Not sure / None of the above	12.5%	2

On a scale of 1 to 5, what improvements would you like to see in your company's Emergency Preparedness & Response Program? (1: Not an issue & rarely occurs – 5: Significant & reoccurring issue)

	1		2		3		4		5	
Communication gaps that exist between Field and Corporate Emergency Response Teams (i.e. sending/receiving key notifications and status updates of the emergency)	20%	3	13.3%	2	40%	6	26.7%	4	0%	0
Company staff cannot easily access Emergency Response Plan information from remote locations.	33.3%	5	26.7%	4	6.7%	1	26.7%	4	6.7%	1
Social licensing and public confidence towards the oil and gas industry's ability to protect their health, safety, and the environment.	40%	6	20%	3	26.7%	4	13.3%	2	0%	0
The high costs and demand of resources from staff required to update and maintain Emergency Response Plans.	21.4%	3	7.1%	1	50%	7	14.3%	2	7.1%	1

On average, how often does your company update physical copies of the Emergency Response Plan for one of your most active operational areas?
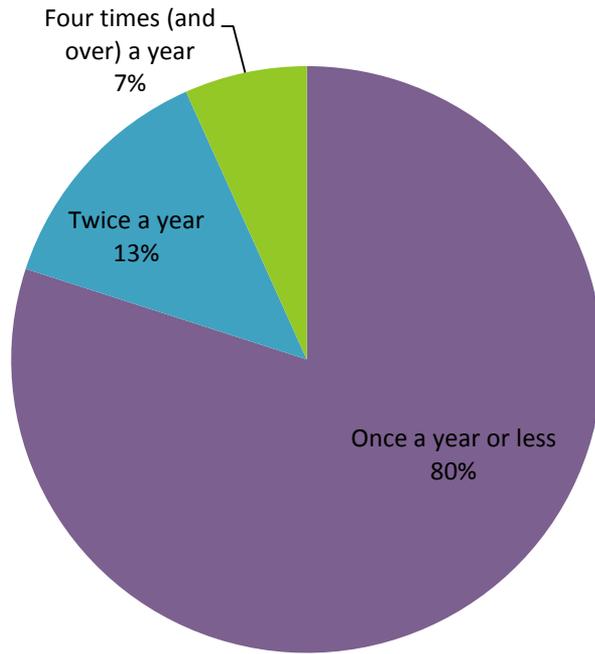
Value	Percent	Count
Once a year or less	80.0%	12
Twice a year	13.3%	2
Four times (and over) a year	6.7%	1
	Total	15

With respect to your company's Emergency Response Plan binder manuals, which statement best describes your current usage of these manuals?
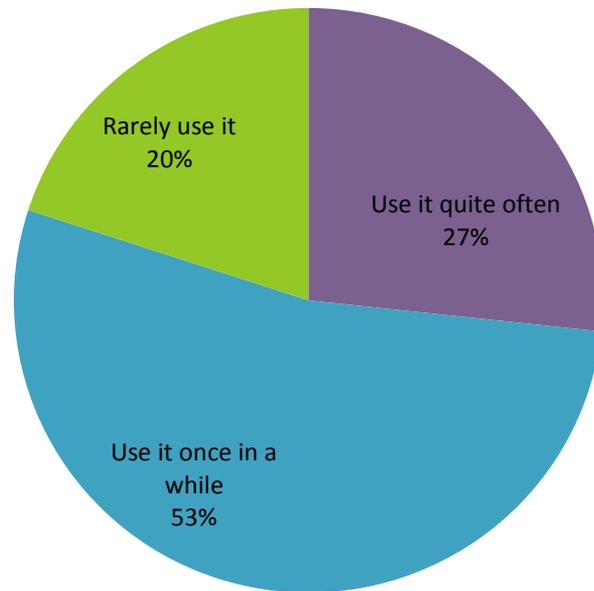
Value	Percent	Count
Use it quite often	26.7%	4
Use it once in a while	53.3%	8
Rarely use it	20.0%	3
	Total	15

What percentage of employees would you estimate use company smartphone devices?
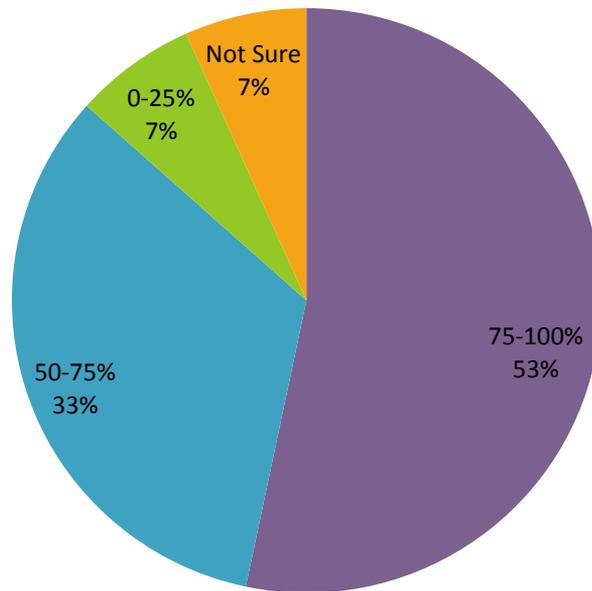
Value	Percent	Count
75-100%	53.3%	8
50-75%	33.3%	5
0-25%	6.7%	1
Not Sure	6.7%	1
	Total	15

What current brand of smartphone devices does your company use? (Select more than one option if applicable)
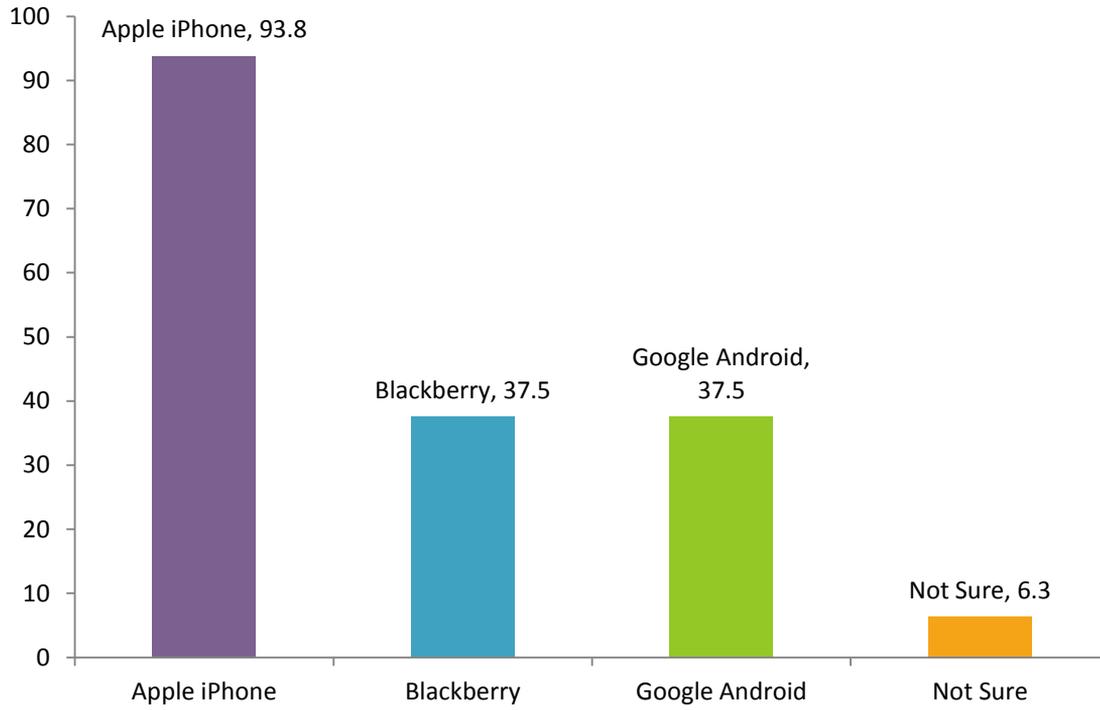
Value	Percent	Count
Apple iPhone	93.8%	15
Blackberry	37.5%	6
Google Android	37.5%	6
Not Sure	6.3%	1

Does your company currently use smartphone or tablet applications for business purposes other than email (i.e. ordering supplies, inputting operational data in the field, field dispatch or work order management, etc.)?
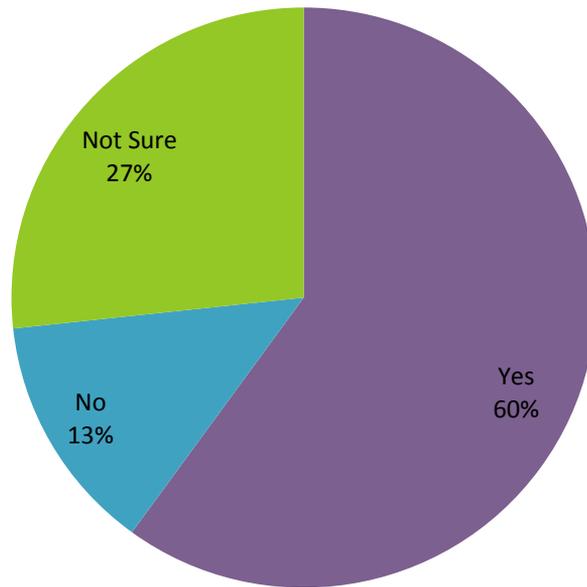
Value		Percent	Count
Yes		60.0%	9
No		13.3%	2
Not Sure		26.7%	4
		Total	15

Using a rating of 1-5, please rate the following on how useful the functionality would be if your company's Emergency Response Plan was available on a mobile application (1: Least important – 5: Most important):

	1		2		3		4		5	
Easy access to Emergency Response Plan contact information. This includes internal (i.e. head office	0%	0	0%	0	7.7%	1	46.2%	6	46.2%	6

and field company staff) and external (i.e. Regulatory agencies, Local Authorities, Emergency Services, etc.) contact information.										
An Operational Area Emergency Status board that shares key information with all users logged onto the Emergency Response Plan mobile application as a message board, including push notifications.	0%	0	0%	0	21.4%	3	28.6%	4	50%	7
General emergency response guidelines (i.e. Medical emergencies / first aid response, Working Alone Procedures, Fire/explosions, Media response, Post incident response procedures, etc.)	0%	0	0%	0	15.4%	2	46.2%	6	38.5%	5
Interactive Operational Maps, with ability to search assets via legal land descriptions and retrieve licensed operational / Emergency Planning Zone information.	0%	0	7.1%	1	14.3%	2	35.7%	5	42.9%	6
Tools such as interactive Incident Classification Matrixes to determine the Level of Emergency	0%	0	28.6%	4	7.1%	1	14.3%	2	50%	7
The ability to provide feedback for the continuous improvement of your company's Emergency Response Plan mobile application.	0%	0	7.7%	1	30.8%	4	30.8%	4	30.8%	4
A self-service approach in which an administrator from your company will be responsible for inputting and maintaining all Emergency Response Plan information onto a web based portal. This can result in lower costs for the Emergency Response Plan mobile application, but will require more training and possibly more time / resources from your company.	7.1%	1	7.1%	1	14.3%	2	42.9%	6	28.6%	4
Availability of an Emergency Response Plan mobile application for Tablets (i.e. iPad)	0%	0	14.3%	2	28.6%	4	21.4%	3	35.7%	5
A full-service approach where a company would be responsible for setting up and inputting all Emergency Response Plan data. This can result in an additional upfront investment for the Emergency Response Plan mobile application but would require less time / resources from your company.	0%	0	14.3%	2	42.9%	6	21.4%	3	21.4%	3

Would having a mobile application increase your usage and overall satisfaction of your current Emergency Response Plan?
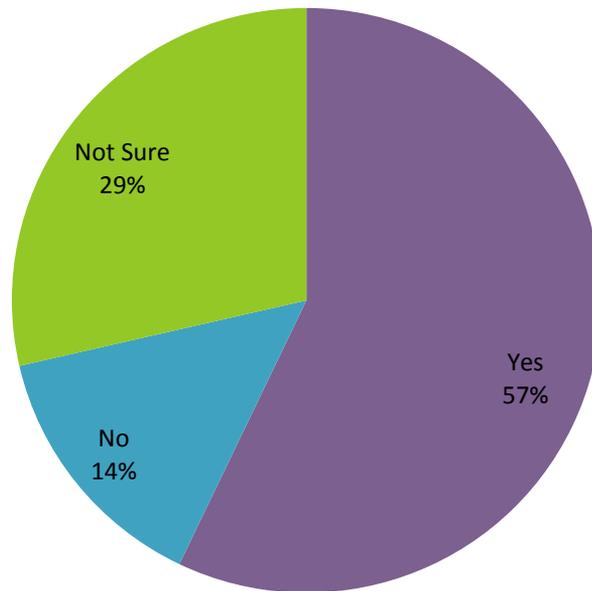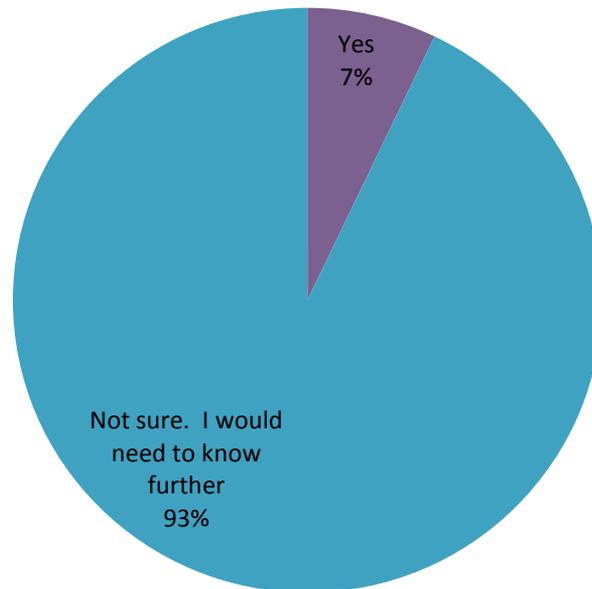

Value	Percent	Count
Yes	57.1%	8
No	14.3%	2
Not Sure	28.6%	4
	Total	14

How much would you estimate your company spends on their Emergency Preparedness and Response Programs annually?
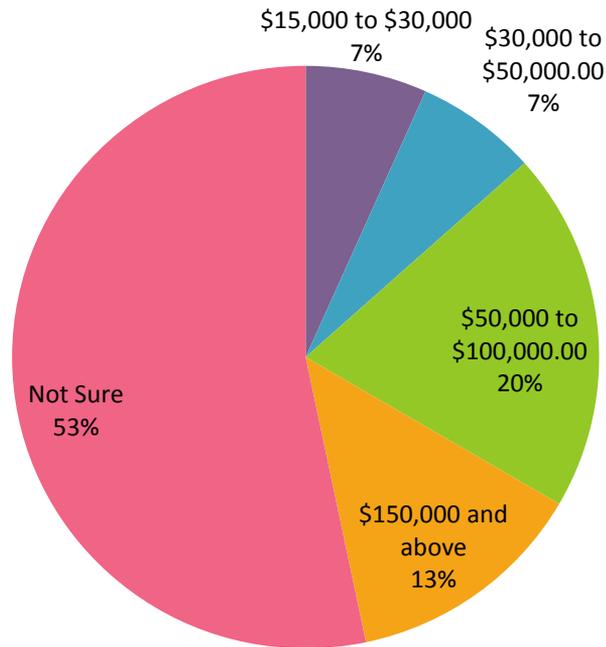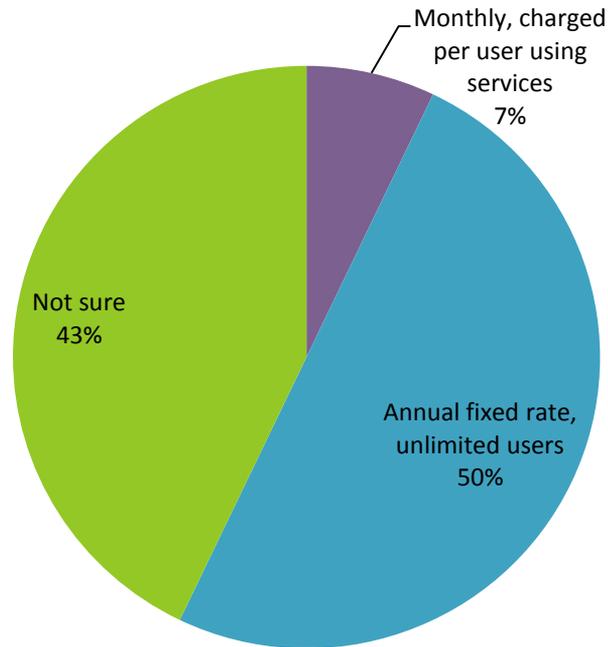

Value	Percent	Count
$15,000 to $30,000	6.7%	1
$30,000 to $50,000.00	6.7%	1
$50,000 to $100,000.00	20.0%	3
$150,000 and above	13.3%	2
Not Sure	53.3%	8
	Total	15

If the implementation of a mobile application costs an additional 15% of your company's total annual Emergency Preparedness and Response program, would it be considered as a practical expenditure for your company?

Value	Percent	Count
Yes	7.1%	1
Not sure. I would need to know further information	92.9%	13
	Total	14

If subscribed to an Emergency Response Plan mobile application service, what billing / payment option would you think would be most preferred by your company?

Monthly, charged per user using services 7%

Not sure 43%

Annual fixed rate, unlimited users 50%

Value	Percent	Count
Monthly, charged per user using services	7.1%	1
Annual fixed rate, unlimited users	50.0%	7
Not sure	42.9%	6
	Total	14

If you presently use a consulting company to develop and maintain your Emergency Response Plan, would you prefer subscribing to mobile application services with them?
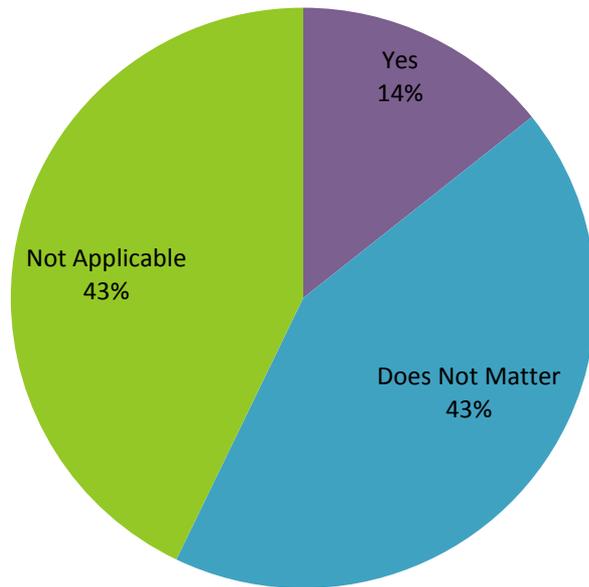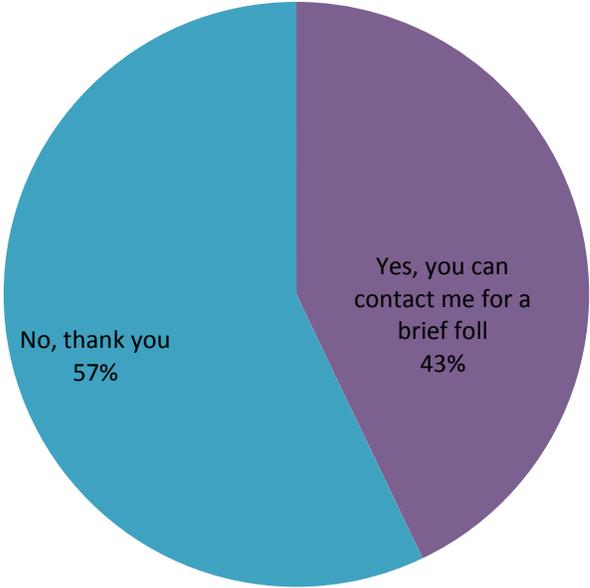

Value	Percent	Count
Yes	14.3%	2
Does Not Matter	42.9%	6
Not Applicable	42.9%	6
	Total	14

Would you be interested in testing a free prototype of an Emergency Response Plan mobile application?
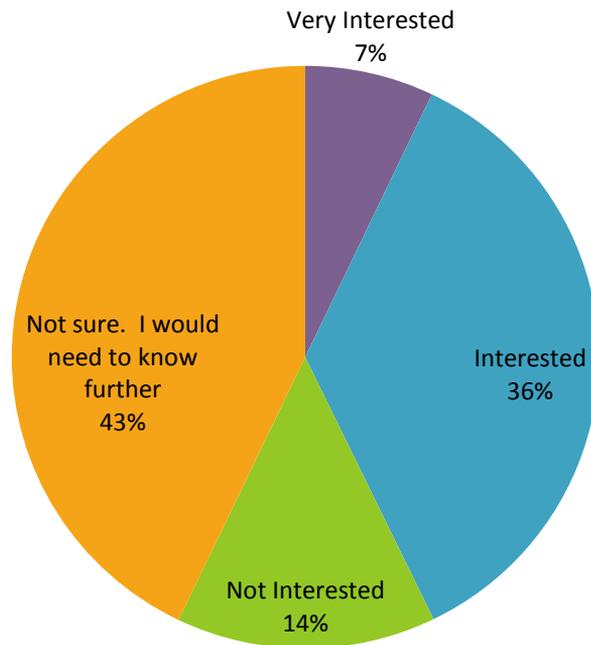
Value	Percent	Count
Very Interested	7.1%	1
Interested	35.7%	5
Not Interested	14.3%	2
Not sure. I would need to know further information	42.9%	6
	Total	14

Upon completion of this questionnaire, would you be willing to participate in a quick 5-10 minute follow-up interview regarding this topic?

Value	Percent	Count
Yes, you can contact me for a brief follow-up interview	42.9%	6
No, thank you	57.1%	8
	Total	14