Information Technology Roles in Crisis Management: A Case Study in Kurdistan Region Government

Mazen Ismaeel Ghareb

Computer Science Department, University of Human Development, Sulaymaniyah, Iraq

mazen.ismaeel@uhd.edu.iq

ABSTRACT

Information technology has turned into an essential piece of the business world. IT is associated with correspondence and business forms crosswise over offices making the utilizations dependant on the technology to play out their work. In this research the creator concentrating on how organizations set themselves up for the crisis that can influence information technology inside the organizations, and what sorts of crisis they are agonizing over. To answer these inquiries a hypothetical structure is defined by assessing a gathering of crisis management literature. The hypothesis is later contrasted with observational discoveries with uncovering contrasts and likenesses. The discoveries in this research demonstrate that the contrasts amongst hypothetical and experimental work are restricted, and the similitude are many. Both clarifies that social event specialists and leaders in an emergency administration group that can bring up conceivable basic situations and build activity designs, is a key piece of emergency arrangement. Alternative methods for correspondence must be readied, and client preparing help the general population included feel safe and realize what to do when a basic circumstance happens. All designs and duties must be investigated every now and again with the goal that they generally are up-todate, old designs are of little help. Emergency planning must be roused. It requires investment furthermore, is expensive. As a result of Islamic State of Iraq and the Levant offensives and the Anbar crisis, more than 1.8 million Iraqi people have been newly displaced since January 2014 and effect the Kurdistan region government in all aspect of management health, humanitarian, education system and economical.

Keywords: Crisis Management, Information Technology, Social Networking, Risk Assessment.

1. INTRODUCTION

Everywhere throughout the world organizations coordinate data innovation and data frameworks into their Government technique. In the most recent decades, IT has turned into an essential empowering influence in enhancing and computerizing government administration forms. Through cutting edge arrangements for example, Customer Relationship Management (CRM) and Enterprise Resource Arranging (ERP) a considerable lot of an organization's specialties utilize IT in their ordinary errands to make and enhance effectiveness, diminish costs, enhance client and accomplice connections, and find new business arrangements [1]. With this expanded utilization of innovation, set up that things can turn out badly. Hazard administration is basic when working with innovation so the Government can get ready for unverifiable activities that may happen, however what happens when the issues go from being dangers to being the emergency? Emergency occasions are capricious, however they ought not be unforeseen. The requirement for arranging and isolating parts is important to handle innovation and the emergency they may prompt[1]. The present circumstance should welcome examination on the eventual fate of both Iraq and Kurdistan. Occasions post-Mosul, after the fanatic ISIS civilian army caught Iraq's second-biggest city without a genuine battle, have changed the nation. Iraq was distinctive pre-Mosul: there was authoritatively one nation, with an armed force, and in spite of the fact that fear mongers were dynamic in numerous spots, they didn't have a state. This impact the Kurdistan economy and make a major financial emergency on account of the Iraq and KRG conflicts. The monetary emergency needs tending to now, and Kurdish pioneers are looking to their companions in the United States and somewhere else for much-required assistance. The emergency bit by bit unfurled in mid 2014 after Baghdad cut off the greater part of the assets. That issue wound up intensified by two ensuing occasions, every one of which would have stressed the assets of any state in the district. In the mid year of 2014, Da'esh (Islamic State) burst on the scene, and through its severity, made a tsunami of damaged casualties. The crumple of oil costs—from $100 per barrel in July 2014 to under $30 per barrel today—is the third blow. Fighting Da'esh is costly. The Kurds are the best battling power against the fierce fear monger association, however $2 billion a year is required to pay for the Peshmerga's military needs and pay rates, as another individual from the designation, Head of the KRG

Department of Foreign Relations, Falah Mustafa Bakir, clarified [3]. The KRG does not at present have the cash to cover those compensations, and numerous Peshmerga are owed a very long time of back pay. This reality is especially noteworthy, as Washington anticipates that them will assume a significant part in freeing Mosul, Da'esh's Iraq base camp. A hindered and weakening monetary atmosphere in the Kurdistan Region has closed down a huge number of improvement ventures, as indicated by a senior authority. Talking in a meeting distributed on the Kurdistan Regional Government (KRG) site, KRG Government said the current money related emergency has ended 6,000 tasks. "This emergency has prompted a lull in the development of business sectors in the district," KRG said. As indicated by him, the emergency has been particularly troublesome for engineers who have had their agreements ended by the KRG. One arrangement that Kurdish authorities have conceived is offering oil freely, as Erbil has been secured a spending disagreement regarding oil-income imparting to the focal government since mid-2014 [4]. "Sending out oil straightforwardly to universal markets will be a need for the [KRG] [to solve] the deficiency in the financial plan," included. The KRG expanded free oil deals in June, fundamentally moving back exchanges to the Iraqi State Organization for Marketing Oil (SOMO) at Ceyhan Port in Turkey. Free deals in May alone acquired $750 million in income for the area, which notwithstanding experiencing a money emergency, is facilitating more than 1.5 million exiles and dislodged Iraqis, and battling a war against Islamic State (IS) activists that is entering its second year.KRG authorities have now debilitated to offer Kirkuk's oil autonomously if the focal government does not exchange the asset rich region's financial plan [4]. There are different sorts of crisis that necessities distinctive sort of administration. In this proposal we will take a gander at emergency identified with data innovation and data frameworks in undertakings, and how organizations are getting ready for them. The consideration won't be on emergency administration identified with nature debacles, fear-based oppression, the decimation of to organize workplaces or damage to representatives. These are calamities on the upper piece of the emergencies scale that could prompt passing's or potentially genuine harm to an organization's foundation and working spaces. In this postulation, the emphasis will be on emergencies that are more "typical". They prompt basic circumstance, however, are not as sensational as the emergencies specified previously. These are the sort of emergencies that normally don't make the daily paper features or influence the vast majority. As it were our view will be on emergencies concerning the innovation, and when it neglects to perform assignments as ordinary. This can be a server breakdown, loss of information/data, control disappointment, human blunders, programmer assaults, genuine infection and malware episodes that damages the endeavor in such a way that the piece of, or even the entire organization will have issues performing

the same old thing [5]. Research here is exceptionally inadequate, yet in the event that an expansion inadequacy can be ascribed to the effective utilization of ICT in the emergency circumstance, it can be trusted that we will have the capacity to better oversee and react to future emergencies. Despite the fact that this is cause for trust, gigantic difficulties by the by the stay in creating ICT for this exceptionally complex area of emergency reaction and administration. This Research will focus on these questions:

- What do we know? What do we think about the part of ICT in Crisis Management? For instance, what conditions can impact achievement or disappointment in outline, improvement, and utilize?

- What do we have to know? Distinguish questions that are liable to be remarkable throughout the following 10-20 years. For case, ways to deal with incrementing the earth for extraordinary occasion forecast/administration, plan and assessment of innovations to help correspondence, basic leadership and learning by included people and associations.

How are we going to discover the appropriate responses? Preparatory dialog of conceivable financing sources, new research techniques, ways to deal with create key organizations, or potentially make shared informational collections.

2. LERATURE REVIEW

Information and communication technology (ICT) for post disaster administration of basic foundation capacities best when its plan takes after from a strong comprehension of the socio technical frameworks that it is intended to help. However as is obvious from past [6] and more present investigate [7], there are noteworthy holes in logical understanding concerning how ICT ought to be composed [8], utilized [9], and assessed [10]. ICT frequently gives the methods by which information, data, and information are shared and utilized crosswise over basic foundation frameworks. Commitments to ICT inquire about in emergency administration in this manner bear heaps of how to dissect, outline, and oversee basic foundation frameworks. Building up a plan for basic ICT-focused inquire about in the space of emergency administration is probably going to require contribution from numerous controls. Information and communication technology (ICT) for post disaster administration of basic framework capacities best when its outline takes after from a strong comprehension of the socio technical frameworks that it is intended to help. However as is apparent from past [18] and more present explore [19], there are noteworthy holes in logical understanding concerning how ICT ought to be composed [20], utilized [21], and assessed [22]. ICT regularly gives the methods by which information, data, and learning are shared and utilized crosswise over basic foundation frameworks. Commitments to ICT look into in

emergency administration in this way bear heaps of how to break down, plan, and oversee basic framework frameworks. Building up a plan for crucial ICT-focused inquire about in the space of emergency administration is probably going to require contribution from various controls. The papers in this exceptional issue are the consequence of a joining of workshop based dialogs among specialists. These discourses, what's more, the different working papers that prompted the contributed articles, focused on three inquiries [23], According to [26] proposal the e-services will solve many problems regarding routines and paper works. These e-services save time and efforts for governments and people.

2.1 What is a Crisis?

Characterizing conceivable basic occasions is one of the key parts of crisis management. It is imperative to envision what the administration group should battle with keeping in mind the end goal to get ready systems and procedures. To conjecture precisely what sorts of emergencies that can happen, and how they will play out is obviously essentially incomprehensible. There are an excessive number of conceivable and incomprehensible happenings. [12] recommends that before beginning to characterize conceivable authoritative emergencies it is essential to comprehend what sort of occasions that really is an emergency, and what the conceivable life systems of it could be.

The meaning of a crisis can prompt a discussion about the entire procedure of basic circumstances, and a general definition isn't anything but difficult to formulate.[12] states that to comprehend and call a circumstance basic, from a business-situated perspective, one should understand that an emergency is any prodromal circumstance that risks:

 (prodromal = "side effect")

1. Raising in power.
2. Falling under close media or government examination.
3. Meddling with the typical activities of business.
4. Imperiling the positive open picture by and by appreciated by an organization or its officers.
5. Harming an organization's primary concern in any capacity, and will prompt more awful operational position.

2.2 Crisis Management

Security and control have turned into a basic region of the IT ventures. At the point when a framework neglects to execute as typical, Government that rely upon data innovation can encounter a genuine loss of administrations capacities. The more drawn out the frameworks are not working, the more genuine the outcomes are. They depend on their frameworks to process basic business exchanges and may encounter an aggregate loss of business capacities if the frameworks

are out in excess of a couple of days. This prompts higher arrangement demands. Systems regularly house classified data about budgetary resources, work execution surveys, and restorative records. They can likewise house data concerning corporate tasks including competitive innovations, item advancement designs and showcasing systems. This is all data is of awesome esteem, and loss of it will have genuine effects. Organizations can't just spotlight individually data yet additionally that of their workers, clients and business accomplices. Not doing as such can prompt the colossal market and budgetary misfortune. Getting ready for emergency and comprehending what to do in these circumstances can, along these lines, give an exceptional yield on venture [13]. Data Technology assumes an imperative part in the event of emergencies, and in addition in their ensuing administration. Open presentation of private conduct can prompt uber emergency. IT can adjust the fundamental idea of protection and mystery in present day social orders [14]. Traditionally, "great" crisis management incorporates three components: there must be an arrangement of activity, the association must have early cautioning frameworks to flag potential emergency circumstances and the association must have an emergency administration group set up with the ability to act. numerous techniques have proposed utilized as a part of emergency management. Policies and rules alone don't understand the emergency. He gives five stages on how organizations ought to get ready for crises.

Numerous techniques have proposed utilized as a part of emergency management. Policies and rules alone don't understand the emergency. He gives five stages on how organizations ought to get ready for crises.

1. Distinguishing threats and risks
2. Play out an outcome examination
3. Define a technique, and sort out assets
4. Preparing
5. Following up plans.

The planning begins with distinguishing the dangers and dangers that are in the organization. It ought to be founded on the business objectives and methodologies and what that could happen. The distinction between Risk Management and Crisis Management in this stage is that Risk Management centers around occurrences that are probably going to happen, while in Crisis Management the arrangement additionally most incorporate most noticeably bad things that could happen. This likewise makes it simpler to deal with the less genuine emergencies. A decent method for doing this is including however many individuals as could reasonably be expected to expand the skill for the gathering .

2.3 The Crisis Stages

According to [16] clarifies emergency by embodying it for purposes of sickness. As he asserts emergency has

International Journal of Computer Engineering and Information Technology (IJCEIT), Volume 10, Issue 5, May 2018
M. I. Ghareb

74

four phases, which is like therapeutic clarifications of stages in disease development: The prodromal emergency arrange, intense emergency organize, ceaseless emergency arrange and the emergency determination organize. These four phases, for the most part, are subject to sickness authoritative conditions. How solid is the infection, how old is the patient, and how sound he used to be. At that period it's the quality of the medication and abilities of the specialist. The condition frequently characterizes how troublesome the circumstance is and what stages can begin. Now and again occasions can occur inside the span of twenty-four hours and develop through each of the four stages, yet in various cases it could be durable.

- Prodromal stage
  The prodromal emergency organize is the first run through when emergency manifestations happen and cautions about conceivable happenings. At times, there is no notice arrange by any means. This period ought to be considered important. In the event that notices are missed, it implies that an emergency can strike quick and unforeseen, and transform the administration procedure into a harm control process. As a rule, this name is given amid the intense emergency time frame, when it is thought back and broke down what occasions that had a basic result [16] states that a notice could be somewhat self-evident, be that as it may, prodromes are not generally effortlessly perceived, once in a while it doesn't have to be a caution, however a move not made to deal with the warning. It is such a great amount of less demanding to deal with an emergency in the prodromal stage. Like with numerous ailments, while it is conceivable to spare the patient's life amid the intense stage, it is significantly more secure and more solid to deal with the issue before it winds up intense before it ejects and causes conceivable entanglements.

- Acute stage
  Intense emergency arrange is the purpose of the emergency where there is no turning back. A great many people have this stage as a primary concern when pondering an emergency. That is on the grounds that a great many people imagine that an emergency starts when its ejection is seen outside, and an end when it ends up unnoticeable. All things considered, an emergency begins at the primary cautions and closures route significantly after the eruptional results are taken care of. Administration of the intense stage is subject to appropriate arrangements made amid the prodromal stage. As [16] composes, activities made to deal with approaching occasions, for the most part, drives either to the surprising blast of an emergency in your

face and an uncontrolled stream of this, or to the planning of when and where it emits. That will permit readiness and perhaps play out some safety measure estimations, and in addition to controlling stream, speed, course and term of the event. The fundamental point is to control an emergency as much as you can. On the off chance that it is outlandish, one needs to do all that should be possible to impact where, when or how the occasion will happen.

- Chronic stage
  This crisis stage could likewise be known as the tidy up stage. Amid this stage examination, reviews, clarifications about the incident are finished. It is additionally connected with recuperation, self-examination, mending and self-question. Keen chiefs will set aside the benefit of this opportunity to enhance forthcoming emergency administration forms by breaking down and looking at what turned out badly and how to manage it legitimately. This stage can continue for some time. One approach to maintain a strategic distance from and facilitate this durable inconvenience is to set up an emergency administration design. He additionally presents a review conclusion which expresses that for organizations that did not get ready emergency administration designs, it took around two and half circumstances longer to adapt to the unending stage than for the individuals who had [16].

- Resolution stage
  Last period of an emergency occasion is the determination arrange that is achieved agreeing and dealing with the three past stages. [16] disks that to advance to this stage one needs to recognize the prodrome, take control of it and figure the speediest and most sane method for achieving the determination. "You will probably transform the defining moment into an open door for you" [16]. Alarms and prodromes must be considered important and in an expectant way to plan for forthcoming emergencies, since an emergency occasion surpasses the properties of issues which typically could be comprehended as day by day issues. This prompts a ceaseless procedure of arrangement and getting ready for the inescapable. crisis management is viewed as moves that must be made to stay away from and stifle damaging intensity of any basic occasions, take control over them and set a legitimate way to proper resolutions. One of the imperative parts of administration in the pre-emergency arrange is trying and training.[17] states: "Without standard activities to test emergency management plans, these techniques wind up lethargic and incapable in case of a genuine emergency. An incorrect conviction that all

is well with the world can exist in the organization basically in light of the fact that "we have an arrangement." The encounter picked up from preparing sets up the organization's notoriety for being readied and ready to survive".

3. METHODS

Many literature reviews have been analysis that addresses crisis management using information technology. Many case studies has been examined that face difference management crisis. This will help KRG government to address their crisis and apply different solution scenario according to the circumstance and KRG crisis. There are cases from different regions where dependable also, substantial measures of key develops have served to maintain investigate in these zones (e.g., appraisals of monetary powerlessness). The advancement of such measures in the zone of emergency administration would empower benchmarking (e.g., of adequacy of arranging, reaction, and recuperation endeavors) and improve validity of work in the space for strategy producers and the overall population. Three distinctive develops got significant consideration amid the workshop: control, trust, and framework state. Control is a focal issue in emergency administration. Various challenges were brought to control up in emergency administration, for example, what are proper measures for deciding in the case of arranging, reaction, and recuperation forms are (I) working inside resilience breaking points and (ii) not subject to non-irregular wellsprings of blunder? A moment repeating develop needing operationalization was trust. The topic of how to quantify trust emerged in exchanges of single administrators utilizing innovations, through strategy creators endeavoring to evaluate the data gave to them from the field. In the first case, given the many-sided quality of much ICT, at which focuses of contact amongst human and innovation do (and should) trust happen? A driving inquiry was what do clients should have the capacity to see or investigate to believe the innovation? The third essential develop needing estimation was framework state. Members perceived the requirement for seeing emergency administration as a multidisciplinary try, furthermore, the errand of doing research on ICT in emergency administration as in this way requiring a comparably multidisciplinary approach. Various open doors for future research were recognized in estimating the condition of sociotechnical frameworks (e.g., basic foundations). Particular cases included benchmarking of execution (e.g., unwavering quality) of basic framework frameworks, however different more subtle cases, (for example, administration confide in such frameworks) were additionally talked about.

There is a principal distinction in look into reasoning between hypothesis driven and issue driven research. On the one hand, hypothesis driven methodologies by definition connect with existing assemblages of information and may unequivocally

infer decisions about methodological approach. On the other hand, they may restrict the extent of request to recognizable

domain, therefore preventing logical advance. Likewise, issue driven methodologies expect that new inquiries that are not secured by current hypotheses are always being uncovered; in any case, it is just with cautious investigation of earlier look into that cases of issue innovation or novelty can be tended to.

Notwithstanding the impressive experience of scientists working with professionals, the fact of the matter is frequently made that the inquire about group needs to develop its engagement with specialists and surely to put more weight on commitments of research to hone. To influence this work to will require legit evaluations of how coordinated efforts between research and practice can be commonly useful (a number of positive and in addition negative cases were referred to). Instructional courses, for example, the expansive scale practices that have been held as of late, offer one open door for analysts to show esteem included, while additionally contributing to the logical premise of the preparation itself. KRG government, for example, numerous different nations, for example, USA in 2008 [24] had a money related emergency so it needs to address the part of innovation for banks and governments in settling and beating the negative effects forced by the worldwide financial crisis. It is basic to look for the greatest advantage from present day innovation answers for help the accomplishments and achievements of the saving money part in the locale which benefited from the vigorous monetary and social development, to keep away from the repercussions coming about because of the current budgetary turmoil that is clearing over every one of the divisions of the worldwide economy The Executive Director for Budget Affairs and International Relations at the Ministry of Finance. Characterizing the part of innovation in checking the impacts of this emergency must be done at the official authority and corporate leader levels notwithstanding the specialized ability to establish a typical comprehension among all gatherings and the trading of encounters for giving a sound logical exertion that backings these goals. At present, there is by all accounts an agreement among every single concerned gathering that innovation can assume an imperative part in the endeavors looking to battle the negative impacts of the global monetary emergency as indicated by the World Development Forum, FT and GT Summit organizer.s numerous organizations conserve even with a questionable economy, this is an ideal opportunity to improve with IT anticipates that can change the business and position the association for future development [25]. This emergency

yielded Arab and worldwide conflict that putting resources into innovation is no more an extravagance, adjusting between high cost - high hazard and expanding business request is the confound that each association look as of now, Technology can offer key commitment to enable chiefs to take an educated choice, diminish cost, oversee assets all the more successfully and in particular measure the outcomes. As per a current paper by the US-based Forester Research, the rate of corporate spending on data innovation is relied upon to increment by 9% one year from now, in spite of a little mishap of 1.6% recorded for the current year contrasted with the 4.1% recorded last year. These comes about are prove for the estimation of the data innovation, and as needs be numerous legislatures, including the US and Japan, have chosen expanding their interests in innovation as the countermeasure against the outcomes of the World's money related emergency. That is the reason we have chosen to co-find the two summits this year, to take into account coordinate communication between data innovation merchants and suppliers. KRG must dependence on innovation to build up a protected foundation accommodate better capacities in hazard administration, while the stresses winning among chiefs from an aggregate crumple of the worldwide budgetary framework can be tended to through a more grounded money related framework upheld by a strong framework in view of advanced technological arrangements [25].

4. FINDING

KRG government most characterize Special projects, (for example, the National Science Foundation's current program in Human and Systems Dynamics) may be created.A look into the group—with excellent diaries, gatherings, and a system of divisions—is expected to manage work around there. At the show, the Information Systems for Emergency Response and Management people group help satisfy the second of these needs.An in some cases ignored part of the advancement of exploring in ICT for emergency administration is that of training, especially at the undergrad, graduate, and expert levels. Leading multidisciplinary look into and rehearse requires ranges of abilities that are not found in like manner over an adequate broadness of individual orders (e.g., recreation in sociology educational program and review based strategies in designing educational program). The papers introduced in this issue address various these inquiries and issues, while articulating recommendations for future research. Every one of the papers offers solid cases from present and earlier ICT frameworks to represent ideas. Walker et al. talk about conceivable expansions of earlier look into on the utilization of gaming reenactments for the deal with crisis management, concentrating specifically on how these reenactments can

bolster preparing and learning. The paper gives a significant verifiable viewpoint, enveloping early work in the field, and plainly following patterns and challenges through to the present. In a far-going audit paper, Schraagen et al. put human variables contemplations soundly in the focal point of ICT centered investigate in emergency administration. They distinguish new challenges for work around there—especially in the development furthermore, approval of instruments to help the improvement of circumstance mindfulness and basic reasoning. Nemeth et al. offer a definite contextual analysis of ICT-based bolster for accomplishing versatile tasks in the basic care circumstances. Their approach empowers low-level subjective and behavioral procedures to be uncovered, plainly depicting the applied and viable connections between considering instrumentation furthermore, hypothetical builds for work in this area. Taken together, the papers incorporated into this exceptional issue unequivocally face inquiries of outline, approval, and assessment of ICT frameworks for emergency administration. A specific quality of this work is its engagement and union of a vast and diffuse writing. The papers likewise offer working models of how multidisciplinary points of view may be conveyed to tolerate intending to perpetual issues in this territory. At long last, we trust that this work will demonstrate valuable to scientists in recognizing promising headings for future exploring.

5. RECOMINDATIONS

information technology (IT) to enhance the accompanying five procedures:

(1) coordination, incorporation and arranging;
(2) information distinguishing proof and sharing;
(3) correspondences and framework;
(4) preparing, aptitude and work force following; and
(5) reenactment and demonstrating.

The greater part of suggestions concern coordination, reconciliation and arranging. The concentrate for the most part includes interagency collaborations. The requirement for a "mutual normal working picture and situational mindfulness" amid an extraordinary occasion is pushed. Another subject that emerges is the requirement for assessing the size of up and coming emergencies and reaction it requires. A considerable lot of the discoveries detail that this kind of arranging can't
be done in a vacuum and should be refined through connections with different associations. There is a need to facilitate the reactions and activities of both the open and private area. These objectives can't be acquired without interoperability between different frameworks and a strong correspondence foundation. Interoperability must be made arrangements for. Interoperability is amazingly

International Journal of Computer Engineering and Information Technology (IJCEIT), Volume 10, Issue 5, May 2018
M. I. Ghareb

77

hard to achieve in an impromptu mold amid an outrageous occasion. Information recognizable proof and sharing is required on numerous levels. Various suggestions stretch the significance of keeping up progressive databases containing inventories of assets and the sharing of these databases among different partners. A large number of the proposals push the requirement for frameworks that can distinguish preparing prerequisites, aptitude and skills of personnel. The following list contains some of the most common themes addressed in the recommendations:

- establishing situational awareness and common operating picture;
- establish information and knowledge management systems;
- establish reporting systems;
- integrate communications;
- establish and maintain deployable communications capability to obtain and retain situational awareness;
- improve logistics;
- identify assets (along with their sources);
- track and monitor assets (human, supplies, materials);
- manage personal identifying information;
- integrated public alert and warning system;
- more robust and accurate system modeling;
- standardize formats for collecting and reporting information;
- coordinating actions of multiple communities/stakeholders (include private organizations).

Improvement of the interoperability of systems through standardization; and track training, expertise, and competencies of personnel.

6. CONCLUSION

KRG Government at all levels might be associated with reacting to a crisis, with regions, urban communities, and towns giving the essential reaction to generally crises. In this manner a noteworthy target is furnishing these purviews with the assets to meet their debacle needs and keep up progression of government. Amid the danger of, or amidst real debacle conditions, neighborhood experts must put crisis reaction designs into prompt task and take activities required to adapt to calamity circumstances. Uncommon locale (e.g., for flame assurance) additionally assume a critical part in crisis readiness and response. State crisis administration workplaces give arranging, organizing reaction and recuperation, moderation, and preparing. They are in charge of planning the arrangement of common guide and the distribution of fundamental supplies and assets; getting and scattering crisis alarms

The kind of frameworks that are expressly tended to all through the suggestions concern production network administration, stock and detailing frameworks, information administration frameworks, learning administration frameworks, coordination following, wellbeing record frameworks, individual IDs frameworks, cautioning and alarming frameworks. None of the frameworks recorded above are new, they are right now being utilized in numerous associations. This prompts the conclusion that the part of IT in the crisis reaction and alleviation group is all around not in the advancement of new sorts of frameworks and advances yet in enhancing the power of current frameworks and in the interoperability of these systems. and notices; checking and organizing asset asks for as a team with elected calamity activities; and, in conjunction with the government, guiding and planning recuperation projects to relieve future debacles and to recoup catastrophe costs. Other state organizations additionally assume a part in emergency administration, participating as fitting with state crisis administration authorities, each other, and other political subdivisions to plan for, react to, and moderate the impacts of an emergency. Nongovernmental associations likewise assume a noteworthy part in emergency response. Following a fiasco, these associations keep on providing administrations for their constituents, and in addition for the legislative offices that have need of their remarkable administrations. Frequently, these associations are preidentified through statewide data and referrals organize and are prepared to expand their effectiveness and capacity to be coordinated into reaction and-help endeavors.

7. ACKNOWLEDGMENTS

REFERENCES

[1] Weiss, J.W. and Anderson Jr, D., 2004. CIOs and IT professionals as change agents, risk and stakeholder managers: A field study. Engineering management journal, 16(2), pp.13-18.

[2] Al-Bajalan, M.M., Al-Jaf, S.M., Niranji, S.S., Abdulkareem, D.R., Al-Kayali, K.K. and Kato, H., 2018. An outbreak of Leishmania major from an endemic to a non-endemic region posed a public health threat in Iraq from 2014-2017: Epidemiological, molecular and phylogenetic studies. PLoS neglected tropical diseases, 12(3), p.e0006255.

[3] Cordesman, A.H., 2018. Iraq: Sanctions and beyond. Routledge.

[4] Harris, W., 2018. Quicksilver War: Syria, Iraq and the Spiral of Conflict. Oxford University Press.

International Journal of Computer Engineering and Information Technology (IJCEIT), Volume 10, Issue 5, May 2018
M. I. Ghareb

78

[5] Dugdale, J., Negre, E. and Turoff, M., 2018, January. Introduction to the Minitrack on Communication and Information Systems Technology for Crisis and Disaster Management. In Proceedings of the 51st Hawaii International Conference on System Sciences.

[6] Steering Committee and National Research Council, 1996. Computing and communications in the extreme: research for crisis management and other applications. National Academies Press.

[7] National Research Council, 2007. Improving disaster management: the role of IT in mitigation, preparedness, response, and recovery. National Academies Press.

[8] Orlikowski, W.J. and Iacono, C.S., 2001. Research commentary: Desperately seeking the "IT" in IT research—A call to theorizing the IT artifact. Information systems research, 12(2), pp.121-134.

[9] Quarantelli, E.L., 1997. Problematical aspects of the information/communication revolution for disaster planning and research: ten non-technical issues and questions. Disaster Prevention and Management: An International Journal, 6(2), pp.94-106.

[10] Stewart, T.R. and Bostrom, A., 2002. Extreme event decision making workshop report. Center for Policy Research, Rockefeller College of Public Affairs and Policy, University at Albany.

[11] Mitroff, I.I., 2000. Managing crises before they happen: What every executive and manager needs to know about crisis management. AMACOM Div American Mgmt Assn.

[12] Aboudzadeh, N., Shoshtari, A. and Hashemnia, S., 2014. Crisis management: Planning for the inevitable. Management Science Letters, 4(6), pp.1191-1196.

[13] Fuller, M.A., Valacich, J.S., George, J.F. and Schneider, C., 2017. Information Systems Project Management: A Process and Team Approach, Edition 1.1. Prospect Press.

[14] Mitroff, I.I. and Anagnos, G., 2001. Managing crisis before they happen. AMACOM American Management Association.

[15] Esbensen, Lars, and Tomas Krisciunas. "Crisis Management & Information Technology." (2008).

[16] . Drennan, L.T., McConnell, A. and Stark, A., 2014. Risk and crisis management in the public sector. Routledge.

[17] Jordan-Meier, J., 2016. The four stages of highly effective crisis management: How to manage the media in the digital age. CRC press.

[18] Alexander, D.E., 2014. Social media in disaster risk reduction and crisis management. Science and engineering ethics, 20(3), pp.717-733.

[19] National Research Council, 2007. Improving disaster management: the role of IT in mitigation, preparedness, response, and recovery. National Academies Press.

[20] Zimmerman, R., 2017. The Cyber and Critical Infrastructures Nexus: Interdependencies, Dependencies and Their Impacts on Public Services December 27, 2017. Rae.

[21] Lieder, F., Griffiths, T.L. and Hsu, M., 2018. Overrepresentation of extreme events in decision making reflects rational use of cognitive resources. Psychological review, 125(1), p.1.

[22] Pielke Jr, R., 2007. Mistreatment of the economic impacts of extreme events in the Stern Review Report on the Economics of Climate Change. Global Environmental Change, 17(3-4), pp.302-310.

[23] Magnusson, P.R., Kristensson, P. and Hipp, C., 2010. Exploring the ideation patterns of ordinary users: the case of mobile telecommunications services. International Journal of Product Development, 11(3-4), pp.289-309.

[24] Naudé, W., 2009. The financial crisis of 2008 and the developing countries (No. 2009/01). WIDER Discussion Papers, World Institute for Development Economics (UNU-WIDER).

[25] United Nations. Department of Economic, 2010. United Nations E-government Survey 2010: Leveraging E-government at a Time of Financial and Economic Crisis (Vol. 2). United Nations Publications.

[26] Ghareb, M.I., 2015. The Challenges of National e-ID for Kurdistan Region government for Multi-purposes. International Journal Of Engineering And Computer Science, 4(10).