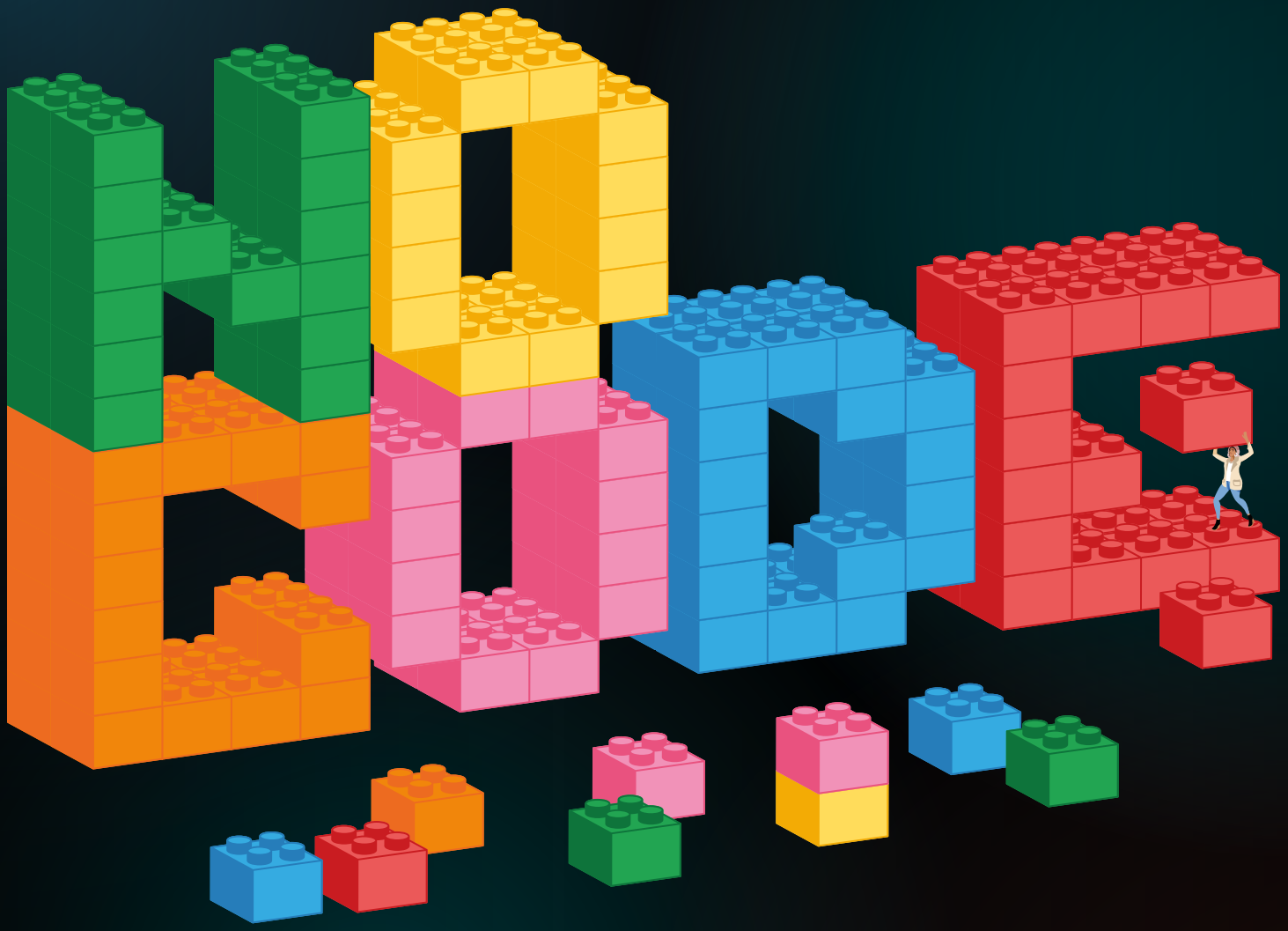

NO-CODE
FOR EMERGENCY RESPONSE & COORDINATION

Aug 2021

DH Network
Digital Humanitarian Network

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No-Code For Emergency Response & Coordination

By

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Acknowledgements

We extend our gratitude to all those who took the time to meet us and share their ideas, thoughts and expertise on the subject matter. We are also grateful for the No-Code customers who shared their experiences in the interviews. We look forward to seeing how vendors and customers can leverage No-Code platforms for humanitarian relief purposes.

Interviewees

Name	Organization	Position
Abhishek Anirudhan	HydCovid resource app	Co-developer
Andreia Tulcidás	OutSystems	Community Engagement Manager
Andrew Alspach	UNOCHA	Information Management Branch
Bob Tapscott	Tapscott Group	Strategy Consultant and Chief Information Officer
Charles Araujo	Intellyx	Principle Analyst
Darelle Van Greunen	Nelson Mandela University Centre for Community Technologies | OutSystems	Distinguished Professor | Customer
Elliott Verreault	AKTEK	CEO
Garry Brownrigg	QuickSilk	Founder & CEO
Jenn Gordon	CBCN | QuickSilk customer	Director of Operations
Kenny Meesters	Tilburg University	Distinguished Professor and practitioner in Crisis Information Management
Keshav Sharma	EPYC | No-Code	Co-founder | Mentor
Lambert Hogenhout	United Nations	Chief Analytics
Leonie Arendt-Cassetta	United Nations	Independent policy consultant
Michael Beckley	Appian	Founder and CTO
Mike Hughes	OutSystems	Product Marketing
Mohammed AlGhaffari	Spiff Inc.	Solutions Architect
Quynh Tran	UNOCHA	Humanitarian Affairs Officer
Ranu Gupta	UNOCHA	Project Manager, Information Management Branch

Name	Organization	Position
Reine Hanna	Medair	Information Management Project Manager
Ria Sen	World Food Programme	Preparedness Lead in the Technology Division
Samantha Steinwinder	OutSystems	Vice President Corporate Marketing
Snezana Djurisic	OutSystems	Talent and Community Program ManagerPosition
Sharizal Shaarani	zer0hunger | OutSystems	Director and Co-founder | customer
Stephen McGill	McGill Buckley | QuickSilk	President and Creative Director | customer
Todd Applebaum	Parsit	Co-founder
Vensy Krishna	Hyd Covid resource app	Founder

Key messages

- Think LEGO blocks. No-Code platforms enable non-technical users, or less tech-savvy people, to build applications and websites leveraging pre-built "blocks" through a visual drag-and-drop interface.

- With No-Code platforms, non-IT people (citizen developers) can build solutions and create tools customized to each team's requirements, with little burden added to the organization. No-Code presents a real opportunity to empower your citizen developers.

- No-Code can empower the projects, products and services that make an organization unique and one that adds value.

- The humanitarian sector can leverage No-Code platforms to better and more effectively help those who need it most. During unforeseen crises, the platforms can allow for the rapid and scalable development of applications or websites.

- With the growing decentralization of leadership and democratization of app development, No-Code presents an opportunity to the sector that will enable timely, efficient and effective action.

- By 2025, 75 percent of the workforce will be Millennials and 24 percent Gen Z.[2] The implication is that much of the workforce will be predominantly more disposed to using digital tools in their everyday lives and more comfortable building something by themselves.

1 The Deloitte Global 2021 Millennial and Gen Z Survey. (n.d.). Available at: https://www2.deloitte.com/global/en/pages/about-deloitte/articles/millennialsurvey.html

Key messages

- No-Code platforms can reduce barriers to entry (including in the disaster response sector), the overall cost for application development, and the time from concept to deployment.
- No-Code allows for more intuitive and actionable interfaces rather than relying on the complicated spreadsheets that the average person might not fully comprehend.
- Although often limited in customization, No-Code platforms deliver on scalability and security. These can be key factors during an emergency, allowing humanitarians to get straight to saving lives.
- One must vigilantly consider the No-Code vendor they select. There are several important considerations such as cost, security, support, consistency, credibility and sustainability (i.e. start up vs. well established).
- Change management will be important to allow employees to adopt No-Code appropriately and efficiently.

Introduction

The humanitarian system is continually trying to improve in order to deliver more effectively. But as technology has changed rapidly, the sector has struggled to keep up. Its technology approach is like trying to get an old Nokia feature phone to perform the capabilities of a modern iPhone. There is a pivot that the humanitarian sector needs to recognize. Ria Sen, Preparedness Lead in the Technology Division at the World Food Programme, commented that "tech is only as good as the purpose of which it is developed" and stressed that tech is not developed in a vacuum.[2] Rather, it is constantly and organically interacting with our complex social and economic environment. With No-Code tools we can place development into the hands of those who best understand the need: citizen developers. They can build (simple) apps quickly that fit their specific needs. Coding becomes 'demystified'.

The No-Code movement's fundamental belief is that technology should enable and facilitate creation. In its democratization of development, No-Code is one digital solution answering the need to support this democratized and accessible structure.

This paper explores the modern No-Code paradigm, how it can be leveraged by the humanitarian sector and some of the common concerns with the platforms. The paper also includes case studies highlighting where No-Code has been used in humanitarian or disaster response.

What is No-Code?

No-Code refers to platforms that allow non-technical users to build apps and websites by dragging and dropping pre-built "blocks" or elements into a visual interface. With little-to-no coding experience, one can quickly build, test and deploy simple and functional applications for any purpose.[3]

Here is an analogy: LEGO blocks — the square, bulky blocks used by young and old building enthusiasts — can be combined to build a variety of larger objects, but without the user having to get into the plastic and molding business. People just use LEGO blocks.

No-Code platforms are similar in nature; you combine various pre-built blocks to develop simple applications. The platform may sometimes provide specialization.

LEGO makes different or custom shapes when needed. No-Code works similarly; each vendor's platform will have specialized building blocks that can be used for a specific purpose. For example, one can buy a LEGO set that contains special pieces to build a Cinderella or Marvel set. If you purchase a No-Code platform specializing in finance, you will find pre-built

2 Interview with Ria Sen, 21 June 2021.

3 Bloomberg, J. (2017, July 2020). The Low-Code/No-Code Movement: More Disruptive Than You Realize. Available at: https://www.forbes.com/sites/jasonbloomberg/2017/07/20/the-low-codeno-code-movement-more-disruptive-than-you-realize/?sh=72e9b8b9722a

finance-related blocks. The specialization enables you to build your solution faster, but it may limit your ability to build applications for other purposes.

The concept of No-Code is not new.[4] Kenny Meester, a professor at the University of Tilburg, noted that these concepts have existed since the heydays of formal languages. After all, coding is just a way of formalizing a set of instructions. Whether the instructions are presented visually or written in natural language, it's all still 'code'.[5] However, with modern technologies, such as cloud computing and artificial intelligence, true No-Code possibilities have emerged recently.

Think: Configuration.

Use the No-Code platform to rapidly put together an app and a solution that works for you.

Who can be a "No-Coder"?

No-Code tends to suit a person who:

- Has some technical understanding or a willingness to learn new solutions.
- Is interested in using digital tools to produce solutions.
- Is comfortable using semi-technical tools.
- Is willing to go through training materials or is comfortable with trial and error.

Technical understanding is not completely necessary for No-Code app development. However, it is key to know the kinds of tools available, what solutions would be useful in various contexts, and which tools to integrate when building a solution.

On being a No-Coder, Stephan, a QuickSilk customer, noted: "It's like any new tool you want to use; it's just getting used to the interface and how you do simple things. Like, how do you add a video, how do you link to your social media profiles, how do you update content, how do you add a page? Like anything, the more time you spend with it, the better you're going to be at it."[6]

4 Groden-Morrison, A. (n.d.). Low-Code App Development is Helping to Battle COVID-19. Retrieved from https://www.alphasoftware.com/blog/low-code-helps-battle-the-coronavirus-and-it-can-help-your-enterprise-as-well, Gartner Forecasts Worldwide Low-Code Development Technologies Market to Grow 23% in 2021. (n.d.). Available at: https://www.gartner.com/en/newsroom/press-releases/2021-02-15-gartner-forecasts-worldwide-low-code-development-technologies-market-to-grow-23-percent-in-2021

5 Interview with Kenny Meesters, Professor & Practitioner in Crisis Information Management, 18 June 2021.

6 Interview with Stephen McGill, 29 June 2021.

The Humanitarian Sector's Problem

At the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), "improving prioritization, reducing duplication, and ensuring assistance and protection reaches those who need it most" are all crucial.[7] Timely and effective decision-making in humanitarian response and emergency preparedness is therefore integral in coordination.

Legacy systems plague international organizations that have invested time and money in building and maintaining them. In the past, these systems were integral for coordination. With that in mind, the first questions that arise are: Why would a coordination office dealing with emergencies and unforeseen crises cement itself in an outdated system unable to interact with new ones? Isn't that contrary to the very essence of what humanitarian coordination needs during a crisis, namely flexibility, customizability and adaptability?

Semi-complex web pages and apps made by developers — built in a traditional manner — often can take months or years to develop and perfect. Think of this emergency scenario: It's 9 pm, the disaster zone is chaotic, people are running around scrambling for water, for help, and you just want to get things done now![8] Outdated and slow systems and methodologies do not bode well for fast-changing situations that need immediate solutions.

Democratizing the development process of our current coordination tools could emancipate the current constraints by quickly building systems that can respond and save even more lives.[9] Businesses are using these platforms to rapidly transform their everyday operations. Why shouldn't the humanitarian sector do the same? With No-Code, organizations and people are empowered to unleash new ideas, create efficiencies, automate and facilitate processes, and build an innovative and creative culture.

With over a million vacant programming-related jobs, it can be difficult and highly expensive to hire developers.[10] No-Code alleviates those concerns by reducing the need for IT capacity. It can reduce IT overheads, minimize maintenance burdens, standardize processes and empower regular personnel to build fit-for-purpose solutions. No-Code has begun to revolutionize app and website development.

Moreover, it seems that the (formal) humanitarian sector is rather skeptical about No-Code's potential. Some have labelled the platform's tools as "quick and dirty", while others have outright doubted their capabilities, especially when reflecting over time.

Some would argue that No-Code is an overhyped marketing term, but should that redact from its capability to transform the technological prowess of technical and citizen developers? Something can be hyped up and useful; the two are not always mutually exclusive.

7 Coordination. (2020, February 14). Available at: https://www.unocha.org/our-work/coordination

8 Interview with Kenny Meesters, Professor & Practitioner in Crisis Information Management, 18 June 2021.

9 Interview with Vensy Krishna, Hyd Covid Resources, 23 June 2021.

10 Wrannaman. (2020, August 25). What Is No-Code? Available at: https://medium.com/nocode/what-is-no-code-8c53f0e4c083

No-Code Benefits

Below is a non-exhaustive list of the benefits of adopting No-Code platforms:

1. Lowers the barrier to entry

Non-technical users can create apps on their own without needing traditional developers. By leveraging No-Code, citizen developers with little-to-no coding knowledge can be part of the process of building and iterating a solution. Instead of waiting for a developer to realize their ideas, citizen developers can build something quickly. The solution can then be scaled over time or expanded to a more complex solution with more specialized support.

> *"To tweak the menu, I just have to make the changes in the Power Apps interface and it is immediately available. I have a customized menu for the application, and I did not need a developer."*
>
> — Ranu Gupta, Information Management Branch, UNOCHA

2. Reduces costs

Subscribing to a vendor can be as little as US$25 a month[11] and citizen developers can get started almost immediately.[12] To put it into perspective, traditional development usually costs thousands of dollars for the development team, the infrastructure and potential opportunity costs. Removing such costs and delays makes it much less expensive for the organization. For example, the Canadian Breast Cancer Network (CBCN) is able to avoid paying significant fees to developers and instead uses the funding for innovation and improvements for its clients.[13] Moreover, maintenance costs drop significantly, as the platform provider includes this work as part of its monthly subscription fees, and existing personnel can update, change and refresh an organization's apps.

11 Interview with Vensy Krishna, 23 June 2021.

12 Interview with Reine Hanna, Medair, 23 June 2021.

13 Interview with Jenn Gordon, Director of Operations for CBCN and QuickSilk customer, 7 July 2021.

3. Faster time to deployment

Applications can be developed, tested and launched within hours or weeks instead of the multiple months or years it takes using traditional technologies and development methodologies. For instance, the City of New York used a No-Code platform to build and launch an online platform mapping COVID-19 in only 72 hours. [14] Changes and updates can be done in real time. Productivity is increased and solutions can be distributed quickly.

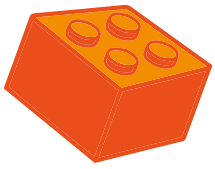
4. Built-in security

The security guardrails and protocols are inbuilt, implemented and maintained in the vendor's platform. Individuals and organizations should still remain vigilant, but there is much less need to worry compared with building and hosting your own solution. Digital security is ensured, with vendors practising regular security audits and security penetration tests.[15] Vendors also provide an assurance of responsible use and exchange of data. Of course, we recommend reading the fine print of any vendor to ensure it aligns with your requirements and philosophy.

5. Data control and management

No-Code encourages the democratization of app development, but an organization administrator can set parameters on data management to reduce potential risks from data mismanagement (or even innocent mistakes/human error). [16]

> *"No-Code vendors are a software-as-a-service platform, which means that whatever we host is what we're responsible for. If there's an update to the software that needs to be done, we take care of that. If there are things that need to be done from a security point of view or a standard point of view or accessibility or privacy, we alleviate our clients from any responsibility for any of them...we address all the behind the scenes (concerns)."*
>
> — Garry Brownrigg, QuickSilk[17]



14 COVID-19 Engagement Portal. (n.d.). Available at: http://nyc.gov/cv19engagementportal

15 Interview with Garry Brownrigg, CEO, QuickSilk, 17 June 2021.

16 Interview with Kenny Meesters, 23 June 2021.

17 Interview with Garry Brownrigg, 17 June 2021.

Benefits for the Humanitarian Sector

1. Offline

This is a major requirement for organizations working in challenging environments where network connectivity might be of particular concern. The availability of this feature varies vendor to vendor, but many No-Code platforms do provide such an option. [18]

2. Customizability

Time is crucial in the humanitarian sector, and the need for dynamic tools with quick customization is critical. No-Code provides tools such as app templates, questionnaires and landing pages for websites that can be easily adapted, within minutes, to fit the unique nature of any emergency.

For example, a template app with offline abilities can be adapted quickly, shipped to the field in minutes and used for data collection immediately. [19]

Rapid deployment using templates: Medair and QLink

Medair provides humanitarian support by relieving human suffering in difficult-to-reach and traumatized locations worldwide. Anticipating a future characterized by major crises due to natural disasters and human-made emergencies, the organization has taken strategic steps with help from No-Code vendor QLink.[20]

During the 2020 port explosions in Beirut, Lebanon, Medair tweaked templates, adapted questionnaires and had a solution ready within 30 minutes. Field managers then deployed these questionnaires based on local needs and context.[21]

Understanding what beneficiaries need is paramount for rapid and appropriate aid delivery. Medair was able to reduce household registration time from approximately one hour to only eight minutes. Overall costs were reduced by 95 per cent.[22] This change resulted in faster aid delivery and better solutions for those who needed it most.

18 Interview with Darelle Van Greunen, Distinguished Professor at Nelson Mandela University Centre for Community Technologies and OutSystems customer, 9 July 2021.

19 Interview with Reine Hanna, Medair, 18 June 2021.

20 Medair Aims to Expand Its Global Humanitarian Work Effectiveness With Qlik Sense SaaS. (n.d.). Available at: https://www.qlik.com/blog/medair-aims-to-expands-its-global-humanitarian-work-effectiveness-with-qlik-sense-saas

21 Ibid.

22 Ibid.

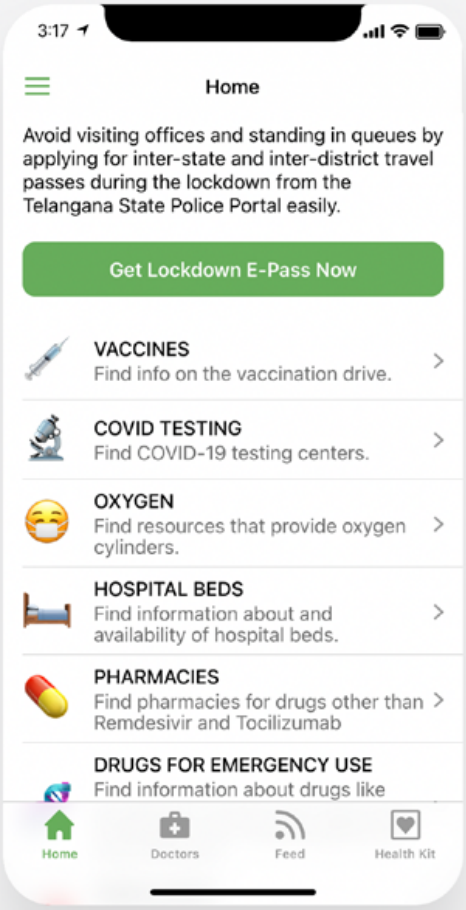
3. Connections

Depending on an emergency's context, there may be a need for multiple digital solutions. And with multiple solutions in place, connecting them for interaction and data exchange often becomes imperative. For example, one can connect a No-Code data-entry app into an in-house database to store data, into an email provider to send transactional email and into an analytics app to track usage. In such a context, No-Code becomes the solution that enables multiple digital solutions to come together. And if your No-Code platform does not have a direct connector, services such as Zapier and IFTTT can often provide the necessary bridge.

4. Local retention

After any major emergency, there comes a time when humanitarian organizations will have to exit the country. In the past, there have been many instances where the technology used by an organization was too complex or expensive for adoption by local entities, leading to inefficiencies or forgotten solutions.

Given all the previously mentioned benefits (low costs, minimal learning curve, ease of creation), No-Code solutions could be handed over to local entities as international and/or humanitarian organizations exit, thereby making it a potentially sustainable solution.



No-Code in response to COVID-19 in India: HydCovid

Vensy Krishna, a lawyer and 'average citizen' with no coding background, found herself in a state of chaos when the Indian health-care system crashed during the second wave of COVID-19 in 2021. It was a chaotic time, with countless people becoming ill, including her family, and Google Sheets circulating with information on where to get emergency care.

Having attended a No-Code workshop for beginners in January, Vensy was able to build and launch the HydCovid app in just two hours.

Not needing a tech team saved her time, energy and money.[23] She explains: "I could be my own tech team, and I didn't need any investment for that."

While leveraging Google Sheets as a sort of database, HydCovid provides an intuitive interface where users can enter and find verified information, such as hospital capacity and oxygen tank availability.

23 Interview with Vensy Krishna, Hyd Covid Resources, 23 June 2021.

"We had about 400,000 unique users who accessed our app 4 million times."[24]

Vensy first shared the app with her family and friends online; it garnered 10,000 users within the first few hours. In 24 hours, it had over 40,000 users. Over time the app was able to scale and serve over 400,000 users. Its use exploded when the country's COVID-19 situation got worse, with the Indian Government reaching out to partner with her solution.
Vensy first shared the app with her family and friends online; it garnered 10,000 users within the first few hours. In 24 hours, it had over 40,000 users. Over time the app was able to scale and serve over 400,000 users. Its use exploded when the country's COVID-19 situation got worse, with the Indian Government reaching out to partner with her solution.

According to Vensy, not one person complained about the app not opening or how it looked. The user interface was not cluttered, it experienced no technical issues and was ideal for information dissemination and action.

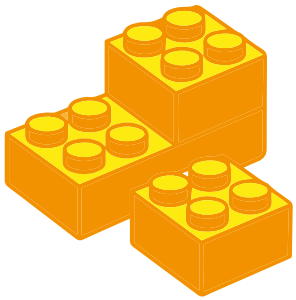
To Vensy, the app's popularity and usefulness were due to four factors:

First: Humans tend to fall back on habits. Google Sheets were not simple or intuitive enough for the average person. But mobile apps were something everyone had used in some form or another.

Second: As data increased, there was only so much a Google Sheet could intuitively show. They are great for storing information but not so much for visualization. Representation of information and making it actionable were key factors that guided Vensy's decision to create HydCovid. From the app, people were able to enter information, gather real-time changes and even take action.

Third: Something like a Google Sheet does not have a domain name. In that sense, it is hard to remember the link in comparison to remembering an app, which can easily be downloaded onto your device.

Fourth: As in any humanitarian crisis, Vensy needed a solution that would work uninterrupted for a variety of audiences, such as doctors, volunteers and reporters, and required no training. People were responding in real time. The solution needed to work.



24 Interview with Abishek Anirudhan, Hyd Covid Resources, 30 June 2021.

Potential Concerns

As with any technology, some issues should be considered before adopting a No-Code platform.

1. Limited Customization

No-Code apps and websites tend to be relatively simple or very focused on a speciality at the moment. Customization of the user interface and services offered are limited to what the selected No-Code platform provides.

In response, one must ask: In the case of an emergency, where a quick, custom solution is necessary, how much customization is really necessary if the app meets the needs and is fully functional, secure and scalable?

> *"I think it's a good reminder … {that the} ... beneficiaries don't care what you're using. The beneficiaries just care if the solution works"*
>
> — Vensy Krishna, Hyd Covid

2. No-Code solutions can be very specific

No-Code vendors in general tend to provide very specific components or solve very specific-use cases. For example, there are No-Code platforms that build only websites or No-Code apps that collect only data. This can be a hindrance if you are an organization that needs multiple functions in one solution.

> *"There is a network of service providers that are No-Code, but you often have to stitch those pieces together to make it all work. And so I think that could be one challenge, understanding which service can solve which problem."*
>
> — Todd Applebaum, Parsit

For example, Parsit is a web-based No-Code solution that allows you to extract information out of documents and create a database with the information.[25] If you are an organization that needs to search through all your documents quickly without hiring someone to do it, subscribing to Parsit means this is the specific service you will get.

The challenge is that it currently does not have an inbuilt way to transfer the information to a database. Therefore, one still needs a human touch or reliance on other No-Code apps, like Zapier, which can connect Parsit to a third tool/service. And while setting up that "bridge" is not overly complicated, there is still some technical work to be done.

In response, there are startups or No-Code vendors that have managed to incorporate multiple services and functionalities. For example, Microsoft Power Apps and OutSystems are platforms that provide a breadth of features and functionality, thereby giving you more flexibility to create what you need.

3. Cost

No-Code platforms market themselves to be much cheaper due to the reduced need for in-house engineers and developers. However, if your solution becomes widely popular and your package is usage or traffic based, your cost may increase significantly.

- In response, for the most part, costs should be reduced significantly when compared to having an in-house developer(s) for every small website/application you want to build.[26]
- An organization should monitor its usage and carefully choose a plan that works best to ensure cost effectiveness.

Remember: Upgrading (or downgrading) payment options can be beneficial, as an organization or individual can adjust their platform's needs based on the changing circumstances.

4. Security

No-Code platforms can generally reduce the risk for most organizations, but we must recognize that we are in a digitally expanding world with increasing cybersecurity attacks.

- In response, it is important to remember that these vendors are constantly updating and maintaining the security of their systems. Keeping their platforms secure is imperative to their business model.
- You should still review a vendor's security guidelines to assess whether they adhere to your organization's standards.

Most vendors will usually provide information on their security testing and protocols.

25 Interview with Todd Applebaum, Parsit, 3 June 2021.

26 As per multiple interviewees who implemented No-Code solutions.

5. Proliferation of development

Humanitarian actors have raised the issue of having 'too many chefs in the kitchen'. Some have said it is not a good idea to democratize app development as it could lead to disorganization and inefficiencies.

> *"Traditionally, if everything's controlled behind this black curtain, only software developers are able to modify it, then you send somebody to communicate with them. And that somebody becomes the end call. (But with No-Code) ... you can have a scenario where you have a lot of chefs in the kitchen...then also, nobody's really kind of the final yes or no. And that can be a challenge... (Structure is needed)."*
>
> — Elliott Verreault, AKTEK

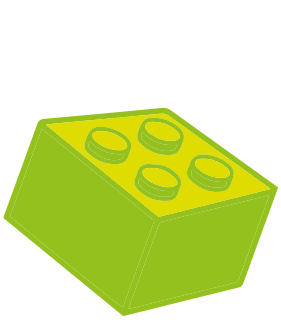
- In response, this can be curbed through sound governance and a community of practice within the organization to ensure there is structure in the app-development space.

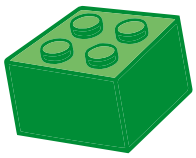
Remember: Vendors generally offer a form of customizable governance within their platforms, which you can leverage.

6. Vendor Stability

As many vendors are young and/or start ups, the question of their future stability could be of concern. Will they be around in two years? Five years? What happens if they are bought out?

- In response, as an organization, one must consider the vendor's financial history and capacity. This will give a good overview of whether or not the vendor can maintain itself over the years.
- It is important to ask whether you will subscribe to a well-established large tech firm or a start up. Weighing the risks is part and parcel of committing to an external organization.





Organizational Adoption of No-Code

Moving away from custom solutions and legacy systems will be challenging to leaders whether they are part of a humanitarian organization or a private company. Regardless of all the benefits and improvements that No-Code can bring to an organization, it boils down to an exercise in change management and strong leadership. From senior management to on-the-ground responders, those working in emergency response need to be comfortable with the platform and be willing to leverage it rather than continue to (custom) build everything.

For a seamless adoption of No-Code into a humanitarian organization, it's important to consider a few key change management steps:

1. ***Establish a focal point or a team of experts*** to support the organization's move into a No-Code system.
2. ***Develop governance protocols*** around the adoption of No-Code. Organizations with a community of practice should leverage these networks to update everyone on new or emerging No-Code protocols in the organization. [27]
3. ***Identify change agents*** - those keen about, excited for, or already building No-Code creations. Their enthusiasm and work could be leveraged to promote the concept, and their creations could be promoted to the organization to build enthusiasm.
4. ***Organize training and workshops*** to create awareness and familiarity with the No-Code platform(s).

> *"The caveat is that there is a learning curve involved, an exposure required… you have to have prior knowledge, you can't expect to come up with something in an emergency (without training or experience)."*
>
> — Ranu Gupta, Project Manager, IMB, UNOCHA

27 Interview with Andrew Alspach, Chief, Information Management Branch, UNOCHA, 17 June 2021

Training for Power Apps in UNOCHA

When UNOCHA introduced Microsoft Power Apps to the organization, Ranu noted that people needed to play with the platform and become familiar with it before deploying any solutions. "It's only through doing things…(does one).. build confidence..."

UNOCHA does this through short training sessions showcasing what the platform can do. The idea is not to make anyone an expert, but rather to show them that they can create. No-Code empowers the average person to build digital tools in house.[28]

(Please note that Ranu is not aware of any Power App that has been deployed in an unfolding emergency, however this is her projection - prior exposure will be required to put something together in a short time.)

Future Considerations

Recent lessons learned and even the ongoing pandemic have shown us that we still need to improve coordination, response and how we communicate. No-Code platforms are forward thinking, sustainable and secure, and they take into account our rapidly changing environment. An interviewee put it this way: "We build it right, we build it fast and we build it for the future.[29]

Local Communities

No-Code has the potential to give beneficiaries of humanitarian assistance true agency — the capacity and resources to actually empower themselves. If fit-for-purpose solutions can be built by the local community, humanitarian assistance may be truly flipped on its head. Providers will need to learn how to interact with these solutions and provide in-demand needs. Depending on access, donors may even be able to see requirements defined by the affected rather than relying on intermediary organizations. By leveraging No-Code and a mentality switch, we can help the move to a future with solutions that work for all: humanitarians, local actors and beneficiaries.

28 Interview with Ranu Gupta, Project Manager, Information Management Branch, UNOCHA, 25 June 2021.

29 Interview with Andreia Tulcidás, Community Engagement Manager, and Snezana Djurisic, Talent and Community Program Manager, OutSystems, 23 June 2021.

Future Enhancements

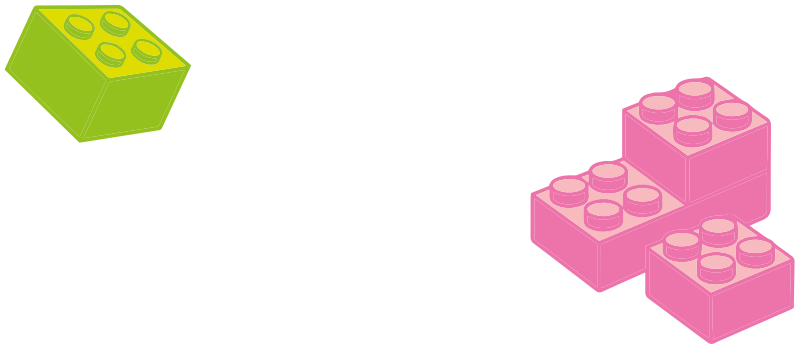
In terms of the complexity and power of No-Code platforms, Charles from Intellyx noted: "No-Code platforms are evolving and increasing their level of complexity ... (and)...their level of sophistication dramatically."

Vendors like Qlik Sense, Microsoft and OutSystems are combining artificial intelligence, machine learning and the Internet of Things into their platforms. The question is not if but when new technologies will become part and parcel of No-Code. Like any disruptive technology, the potential for improvement, growth and advancement is quite unbounded.

No-Code with Artificial Intelligence: Medair and Qlik

By using Qlik Sense's Machine Learning, augmented analysis and intelligence-alerting capabilities, Medair is able to focus its resources and proactively manage challenges faced in the field.[30] *These solutions can be accessed across the organization, from HQ to field operations, through shared dashboards accessible from the Qlik platform.*

Medair's use of No-Code has meant its coordination and response have been robust and much more efficient than in the past. This has translated into better operations around the world.[31]



30 Medair Aims to Expand Its Global Humanitarian Work Effectiveness With Qlik Sense SaaS. (n.d.). Available at: https://www.qlik.com/blog/medair-aims-to-expands-its-global-humanitarian-work-effectiveness-with-qlik-sense-saas

31 Ibid.

Conclusion

In today's age, we need digital solutions that can be quickly developed, rapidly deployed and easily understood. At its core, this is No-Code. Digital integration and silo resistance, which are both desperately needed in the humanitarian sector, are often benefits seen when adopting No-Code platforms and a related mentality. Humanitarian organizations need to seriously consider this technology, as it can not only democratize the workspace and IT development but also significantly improve efficiency and effectiveness in the field.

Technologies come and go. But how we choose to absorb technology and change will set the humanitarian sector apart from its previous, hesitant self. Being pragmatic and forward thinking with technologies, such as No-Code platforms, will vastly improve coordination in humanitarian assistance.

The No-Code arena is a rapidly evolving space. Companies small and large are building very powerful solutions through these platforms, with ecosystems developing around them where the citizen developer can build custom tools to solve complex and time-sensitive problems.

No-Code is presenting the opportunity for organizations to focus their resources on aspects that add value and make them unique. As the space matures day by day, it will be exciting to see how powerful No-Code platforms can become and how they will be used to support humanitarian emergencies.

Annex

Introducing Low-Code

Low-Code and No-Code development platforms are both visual software development platforms where developers/coders and somewhat "tech-savvy" people (citizen developers) can build mobile and web apps without having to write code, line by line. Low-Code and No-Code are sometimes used synonymously in reports and promotional material, but there are some key differences.

Low-Code requires users to execute a higher level of coding in comparison to No-Code platforms. It is still much less than traditional app development, as it unburdens developers of repetitive and generalizable programming tasks.

Low-Code is therefore quite technical and, as a result, is usually employed by those with high technical knowledge and prowess, such as IT developers.[32] In contrast, No-code users should users should not need a (strong) technical background. Therefore, Low-Code is best suited for developers who would rather not reinvent the wheel but want to ensure high productivity. Developers with a substantial skill set can move faster, resulting in a significant reduction in complex project development. For example, one interviewee noted a reduction from a traditional development-style time frame of two to three years to a Low-Code-powered time frame of nine months.[33]

Low-Code real-life examples

Americares

Non-profit disaster relief organization Americares has supplied over $10 billion in humanitarian aid in over 164 countries in the past four decades. A three-member development team manages all its IT needs using Low-Code platforms.

With hurricane season approaching several years ago, Americares needed an app that could work offline during the disaster and a mobile solution to quickly ship orders. The database-driven app was created in weeks rather than the nine months it would have taken had the team used traditional coding.

The same app was used in various disaster relief efforts, including Hurricane Matthew in Haiti in 2016, which killed over 500 people and left over 30,000 homeless. With the aim of utilizing 97 per cent of their funds for impact programmes, the Low-Code platform had transformed the team for nimbleness and leanness.[34]

32 Interview with Elliot Verreault, AKTEK, 3 June 2021.

33 Interview with Mike Hughes, Senior Director, Product Marketing, OutSystems, 25 June 2021.

34 Hughes, M. (n.d.). Top Insurance Providers Tap Into to Low-Code Platforms to Respond to Disasters. Available at: https://www.toolbox.com/tech/programming/guest-article/top-insurance-providers-tap-into-to-low-code-platforms-to-respond-to-disasters/

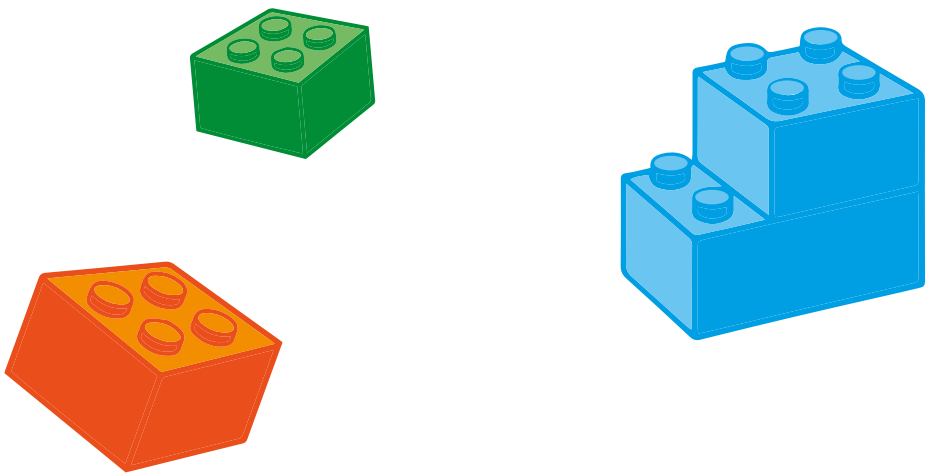
Universal Puerto Rico

Providing insurance for Puerto Rico, Universal Puerto Rico has responded to some major emergency and disaster relief missions over the years. Traditionally its IT systems ran on WebSphere portals, and projects could take up to two years to develop, with extensive coding knowledge needed.

In 2017 Hurricane Maria knocked out power and communications across the island, causing over $90 million in damages. With power outages and the communication network down, the company partnered with a third-party adjuster. Combining the outages with proprietary solutions used by some adjusters, it was not possible to transmit data to the central claims system.

Leveraging a Low-Code platform, Universal Puerto Rico's developer created a new solution that allowed the adjusters to upload claims data, after which the company could automatically transform them and insert them into the claims system.

The resulting app gave Universal Puerto Rico a level of insight on call volumes, routing patterns and abandonment rates it had never seen before. [35]



35 Universal Puerto Rico Adjusts to Changing Customer Expectations With Citizen Developers and OutSystems. (n.d.). Available at: https://www.outsystems.com/case-studies/citizen-developers-and-outsystems/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