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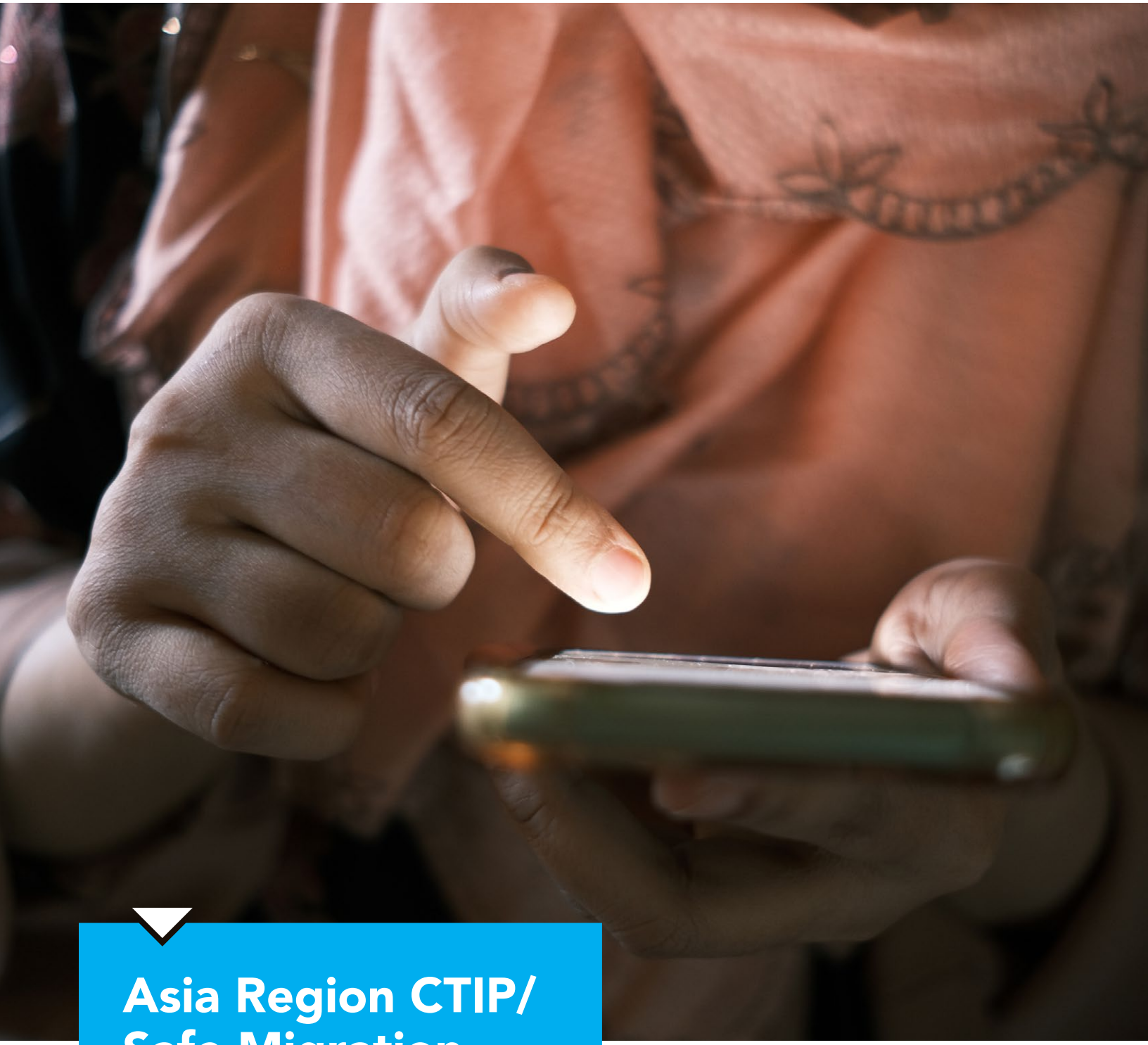

Asia Region CTIP/ Safe Migration Digital Tool Study

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USAID Asia CTIP

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INTRODUCTION

According to the ILO, Asia-Pacific is home to more than half of the world's internet users and around two billion people in the region use internet daily through their mobile phones.[1][2] Accelerated by the COVID-19 pandemic, the internet has become a vital part of daily life that offers new solutions to emerging and traditional challenges. In 2020 alone, 40 million people in Southeast Asia's six largest economies (Indonesia, Malaysia, Singapore, Thailand, Philippines, and Vietnam) became internet users for the first time.[3] The region's internet economy exceeded 100 billion USD for the first time and is projected to triple to 300 billion USD by 2025.[4]

Coinciding with this trend is the increase in development and deployment of digital tools in the development and humanitarian sectors as innovative solutions.[5] Winrock International's USAID Asia CTIP project has observed this trend firsthand in recent years. We have developed and partnered with technological organizations to take advantage of the rapidly expanding coverage of internet access and increase in digital literacy in migrant populations.[6] We have also observed that while some digital tools are beneficial to migrants and CTIP practitioners, a number of challenges exist, spanning from functionality to adaptation to funding, that had led to their failure.

This research seeks to understand the use of digital tools and technology in the Asia region that are designed to assist migrants with the overarching goal of reducing their risks to exploitation and forced labor. In particular, the objective of this research is to gather insight from people who have been involved in the development of a digital tool[7] in the CTIP and safe migration space under the following research questions:

What are some challenges and good practices in developing digital tools in Asia?

Which aspects should be considered when creating future digital tools in the CTIP and safe migration space?

This research uses a qualitative approach through semi-structured key informant interviews (KIIs) with 18 people representing both NGOs and the Private Sector. A wide range of digital tools were discussed, ranging from Interactive Voice Responses (IVR) to full-fledged smart phone applications. Multiple types of digital tools were examined, and the key findings discuss the various types of digital tools, their pros and cons, and various considerations required in designing a digital tool. Finally, this paper provides recommendations on good practices when it comes to developing digital tools. It is our hope that entities contemplating digital solutions to TIP and forced labor find this report helpful in providing important points of consideration, thereby allowing them to deploy their resources effectively.

1 Op-Ed: How digitalization can help achieve fair migration (ilo.org)

2 Young people use mobile Internet more intensively in Asia-Pacific - Internet Society

3 In Southeast Asia, COVID-19 Speeds Transition to Digital Technologies – The Diplomat

4 In Southeast Asia, COVID-19 Speeds Transition to Digital Technologies – The Diplomat

5 In Southeast Asia, COVID-19 Speeds Transition to Digital Technologies – The Diplomat

6 USAID Asia CTIP, in close partnership with USAID Thailand CTIP, has developed one application: Doc2Work. Additionally USAID Asia CTIP also partners with Migrasia to provide services to workers through social media channels. USAID Asia CTIP has also partnered with Labor Solutions to translate learning modules into Khmer.

7 For the purpose of this research, a digital tool is defined as tools that are available on digital platform such as mobile application, social media channel, or a website.

RESEARCH METHODOLOGY

Data collection and sampling

The data for this study was collected through semi-structured key informant interviews with a total of 18 individuals. Of which, 13 were representatives from non-government organizations (NGOs) and 5 were representatives of technology companies. The interviews were conducted online from May to July 2022. After consent from participants were given, the interviews were held and recorded online through Microsoft Teams, after which the data were transcribed through Microsoft Word and coded and analyzed using MAXQDA. The question set for both NGOs and technology company representatives can be found in Annex 1.

We listed a total of 30 digital tools and contacted 23 people in our request for interviews. Of the 23 people, 18 agreed and were interviewed. These contacts are both from desk research and snowball sampling based on USAID Asia CTIP network of partners and contacts throughout Asia, including a few interviews which were successful thanks to the contact from the Thomson Reuters Foundation. The tools were selected based on their geographic focus in Asia and that they are contributing to support migrant workers and victims and potential victims of TIP/Forced Labor.

Ethics

Verbal consent for the interviews were given by participants to researchers prior to each interview and before their recordings. Abiding by an understanding of research ethics and confidentiality, the research team was always mindful about the participant and data confidentiality; all personal data was anonymized during the analysis phase and no personal identification information was revealed through the report or any other publication.

Limitations

The first limitation of this research is the lack of perspective from end users, namely migrant workers. Interviewees for this research solely represent the perspectives of digital tool creators and developers and it did not examine the perspectives of intended end users, whether that be auditing/compliance personals, law enforcement, or migrant users themselves. Therefore, the good practices and challenges for developing digital tools reported in this research are filtered through the perspectives of developers and may miss other needs and experiences of end users.

The second limitation of this research is the lack of government officials' perspectives. While not all digital tools that we examined have governments as intended users, many interviewees mentioned the importance of having governments support for the tools that may directly or indirectly improve its uptake. For example, a government agency may direct migrants to download a particular digital tool during their mandatory predeparture training, increasing the usage of that tool. Further, digital tools that partner with a government-owned telecommunications company may increase their credibility to potential end users. However, this research was unable to gather perspectives from government actors.

Lastly, this research relied on developers themselves to assess the success of their digital tools. Therefore, it is likely that interviewees would hold positive bias[8] for their tools when it comes to assessing their effectiveness. To mitigate this, interviews were conducted with a diverse group of participants who each had experiences of using digital tools, which allowed for the triangulation of perspectives from both the Private Sector and NGOs. Although the number of participants interviewed was insufficient for our findings to be generalized, we argue that findings from this research is a robust base from which practitioners and developers can begin to consider the usefulness of digital tools within the CTIP space.

8 Hoorens, V. (2014). Positivity Bias. In: Michalos, A.C. (eds) Encyclopedia of Quality of Life and Well-Being Research. Springer, Dordrecht. Accessed via: https://link.springer.com/referenceworkentry/10.1007/978-94-007-0753-5_2219

FINDINGS

Types and Purposes of Digital Tool

Out of 18 interviews, we identified 4 general types of digital tool platforms which are: mobile application (16), social media channel, such as Facebook, YouTube, TikTok, Instagram (7), and chat application, such as Line, WhatsApp, Telegram, (4) and, and websites (3). Tools which fell outside of these four types are categorized as 'other platforms' (8) for example, e-learning modules, Interactive Voice Response (IVR), and Short Message Service (SMS).

It should also be noted that some developers also used more than one platform to operate their tools, for example a job matching platform that reaches their clients through social media and websites. Further, chat applications were seen as a distinct category and separate from mobile applications because many of the chat application tools developed were not built from scratch by the developer but created as a new channel on an existing mobile platform. For example, we did not count CSOs who maintain hotlines through messaging apps such as WhatsApp or Telegram as mobile applications because these take advantage of already existing mobile applications.

The digital tools mentioned during the interviews were developed as support tools for migrant workers, workers, victims and potential victims of TIPs/Forced Labor, private sector actors, as well as non-profit organizations. The geographical focus of these tools varies from one origin country, global, and selected multi-origin countries. The purposes of these tools vary from acting as a source of information, to offering interactive grievance mechanism channels, to auditing supply chains.

In addition, digital tools may also be categorized based on their purpose. In this research, tools which provide information or news for migrant workers/ workers were most frequently mentioned during the interviews. These tools usually provide information and updates to users on information that is related to workers' migration journey or daily lives as a migrant worker in specific destination country such as information on their rights, and available services in their destination countries. The contents are available in the form of a written post and/or a video.

The second most frequently mentioned purpose of digital tools are those that provide grievance mechanism channels, which include direct reporting channels such as a chatbot, call center, survey form, or complaint system. Some of these tools also offer important contact information to reach for help such as embassy, hotline, or mission contacts.

Further, other functionalities of digital tools were examined in the interviews. For example, tools that allow migrant workers to understand what the regularization processes in their destination countries are and offer a system to store essential personal documents. Some tools offer supply chain due diligence service, which connect workers with their employers to provide more information on working conditions in the supply chain. Finally, some tools act as a job portal for workers, linking them to verified jobs to ensure workers are not at risk to TIP in the process. The table below illustrates the types of tools and their purposes.

In general, the tools are designed to be used through mobile phones and require internet network connection, although some may be downloaded and used offline. This is because, according to informants and literature, while migrant workers tend to have access to smart phones, only a relatively small proportion of them have access to conventional computer or laptop devices. [9]

TYPE AND FREQUENCY	PURPOSES
Mobile Application	Document storage, information sharing, social auditing platform, grievance mechanism, helpline, job portal, financial tool, chat
Social Media Channel	Information sharing, grievance mechanism, helpline, job portal, chat
Website	Information sharing, job portal, chat
Chat application	Information sharing, grievance mechanism, helpline
Others	Information sharing, helpline
Multiplatform	Information sharing

9 *Mobile women and mobile phones*, International Labour Organization, accessed via: https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_732253.pdf

THE PRE-DESIGN PROCESS

One of the most important aspects of digital tool development lay in the pre-design stage where the developing team[10] gather information about the problem, target users, and the context in which the digital tool will be developed. Many tools suffered long term challenges due to a pre-design process that was not thorough or that neglected important considerations. This section explores good practices at this very first step of digital tool development.

Pre-assessment and Stakeholder Consultation

First, before a tool is formulated or conceptualized, it is paramount that the problem it is meant to solve is well understood to the developing team. A misunderstanding of a problem will inevitably lead to solution that will not alleviate the problem effectively,

> *I think sometimes it's very easy to get excited and build a tool to try to solve a problem without really understanding what the problem is in the first place, so we see there's like a lot of talk around blockchain technology (and how it) is going to solve all of our supply chain problems, but a lack of, like, understanding of what the situation actually is on the ground, if that makes sense. And so I think one thing that we did really well with (our tool) and the initial development was to spend a lot of time talking to (intended users) and talking to the companies and really understanding the issues that they were facing and we developed off the back of that. – Manager, CSO 1*

To better understand the problem that a digital tool intends to solve, stakeholder consultations, pre-assessments, and baseline analyses should be conducted. This can be in multiple formats such as interviews, roundtables, or focus groups with relevant stakeholders. These will allow the developing team to gain deeper insight into the problem and, just as important, the target end users of the digital tool. If possible, it is recommended that the team also present multiple digital solutions in these consultations so that potential users can choose one that is best suited to their needs and circumstances. The pre-assessments should also ensure that the developing team does not duplicate existing digital tools or other solutions.

As will be demonstrated throughout this paper, the end user should be consulted, and their feedback should be solicited throughout the process of digital tool creation to ensure that the output will be most usable, beneficial, and accessible to the users,

> *One of the things that we would have done differently is had some focus groups for what was useful. I think we relied a lot on our own program teams' ideas. Not that they're faulty in any way, but maybe we could have reached out to others to get some input. – technology company. – Chief of Party, Winrock country CTIP project A*

The comment above also alludes to the tendency that many digital tool developers have to rely on their past experiences, whether in the international development or technological sector, as a guide for what digital tool to develop. While this should be encouraged and each team member's perspective and experiences are invaluable to the success of the tool, sometimes what the team thinks and believes is the best purpose and design for the tool may not reflect the needs of end users, or indeed solve the most pressing issues faced by them,

> *My recommendation would be to really consider who the target demographic is. And this value sensitive design approach, I think, is really helpful when you get to those situations where you have different opinions of what should be developed and what should not. – Director, tech company 1*

Understanding Intended Users

After understanding the problem to be addressed by a digital tool, it is important that the team gain a deep insight into the targeted demographics. This is important because a tool should take advantage of the level of digital literacy that the intended users already have, minimizing barrier to access and at the same time, saving on resources that may need to be deployed by the developers to train new users. For example, one technological company interviewed

10 *Developing Team* in this research refers to entity that are contemplating and/or creating the digital tool, whether that be from the CSO, Private Sector, or other sectors.

stated that they would have preferred to have a more complex tool with more functionality but that they ultimately built an IVR tool (interactive voice response) that was best suited to their targeted population.

Choosing an IVR tool in this case has several advantages. For example, it is accessible to people who may not know how to read or write and is simple to use by requiring the user to only dial and call a five-digit phone number. Most importantly, users are often already familiar with the way that an IVR functions because of its similarities to using a mobile phone. The interviewee highlighted,

> *And another point that really struck me was to have migrants involved in the process. Almost everyone we talked to was making sure that we were listening to the voice of migrants, like listening to their problems and trying to develop something that would answer their questions. – Senior Research Analyst, CSO 2*

Lastly, developers need to create tools based on the digital proficiency, habits, and routine of end users. The developing team needs to gather more information and requires a strong understanding of the types of devices that are generally used by end users, their digital literacy, and how they are already spending time online. This will lead to the creation of tools that are best suited to the real-life needs and priorities of target users, instead of creating overly sophisticated and costly tools that end up becoming white elephants.

This section highlighted the importance of understanding the problem and intended end users before beginning to design and develop a digital tool. It should also be noted that a developing team may have members who have been working in the target communities for many years and have intensive local knowledge of the target audience. As such the expertise of these members should be consulted as their knowledge may allow the team to have greater insights without additional cost to the digital tool development. In the next section, we provide an overview of good practices, challenges, and key considerations in designing a digital tool.

THE DESIGN PROCESS

Once the team has ensured that it understands the problem it is trying to solve, the target users, and the context of the tool in the pre-design process, it is ready to begin to design.

Right skills for the tool

The first step is to ensure that the developing team has the necessary technical skills set to develop the tool. The development of digital tools which aim to address CTIP-related issues requires expertise from both the information technology and international development/humanitarian sectors. [11]

> *I think personally the learning has been that you need to really have this mix of skills between the engineers and the applied knowledge. I think it's essential to make sure of that because the engineers will never say no. Everything is possible for them but the question in time is one thing, and when they develop a use case it's very narrow, right? And typically in social science there's a lot of human behaviors (which) are very nuanced and so you have to constantly go back and forth between social science and computer science. – CEO, tech company 2*

Once a team with all the required technical proficiency and complimentary CTIP-related knowledge has been assembled, and the problem and targeted end users are identified, The developing team can move into the design phase of the tool.

Design a Simple Tool

In general, digital tools should be designed so that they are optimized for mobile phone users. This is because interviewees reported that while migrant workers generally have access to a phone, they do not always have access to a full-sized computer or laptop. As such, unless otherwise revealed in the pre-assessment, it is very likely that intended users will access the digital tool through mobile phones.[12]

The tool should be designed as simply as possible. While it may be tempting to think that simple and minimalistic tools will not function well or attract users, on the contrary, tools that are simple generally entail easier maintenance because the IT infrastructure are also simpler, requiring less specialized knowledge to fix bugs and keep them operating smoothly. Depending on the result of the stakeholder mapping and analysis, the complexity of the digital tool should fall within the intended users preexisting digital literacy to ensure that they can take advantage of the tool, much like the preference for IVR in Nepal discussed above.

A tool that is overly complex or sophisticated has multiple disadvantages. First, it requires that users have access to devices that can support them. This may pose a challenge to migrant workers who have limited resources and whose devices may not have enough space or capacity to run a complex digital tool. Migrant workers may also be less inclined to download a tool if it is too large, particularly if it forces them to spend money on additional data packages. For example, a social media channel, when compared to a mobile application, may be preferred by migrant workers as it does not require them to download a new application. An overly complex tool may also pose challenges to migrant workers who have limited online literacy. One interviewee explained,

> *We learn that you may need to keep it really, really very simple. Even drop-down menus can confuse people. Or giving more than two options, it's confusing. So, we tried to simplify the entire system. – Chief of Party, Winrock Country CTIP Project B*

Privacy and Data Protection

Another important aspect of design is privacy and data protection of the users. Multiple respondents stated that migrant workers may be more unlikely to use the digital tool if they need to disclose their personal information, therefore it is recommended that the digital tool minimizes the amount of identifiable information collected from users. The exact parameters of personal information required by the digital tool will be dependent on the function. For example, if a tool is meant to disseminate information to migrants, then no information should be collected. However, if a tool is a grievance mechanism, it should collect enough information to ensure that the case

11 It should be noted that certain tools, such as social media channels, require less technical knowledge of information technologies to create and maintain

12 *Mobile women and mobile phones*, International Labour Organization, accessed via: https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_732253.pdf

can be followed up appropriately. One technology company, described their thought process when their implementing partners asked to include a photo storage system for people who use the tool with the purpose of identifying the users for follow ups,

> *We were faced with this trade off because privacy goes there, you know. And with a community like this where people are reporting on exploitation, we had conversations and even with the IOM they have a great data protection manual. And so we went through that, and we actually decided to prioritize the users privacy over this ease of follow up because we did a big study on what would happen if things go wrong or went wrong, you know, what would happen if inspector or an outreach officer or someone like that shared this information that they had captured, then is it in the worker's best interest for this information to be kept, and we decided well, for that case of the photo, it wasn't worth the risk, so we didn't include it. – Director, tech company 1.*

Further, a digital tool should not promise functionalities that it cannot develop or follow through with. One interviewee cautioned with an example of adding a grievance mechanism functionality even though an organization may lack capacity to provide remediation or referral services, including reports of abuse and exploitation. Collecting sensitive information without providing support to solve grievances would not only be unethical but erodes the trust of migrant workers and could make them even more reticent to express grievances in the future.

Sustainability

Sustainability, in the context of this paper, refers to the digital tools' ability to be maintained and operated over an extended period. USAID Asia CTIP's experience has found that many promising tools which had been robust design and undergone piloting processes were not sustainable in the long run. The question of sustainability was thus posed to interviewees, resulting in the findings below.

Sustainability concerns can be categorized into three groups. The first is funding. In the CTIP sector, funding generally lasts a period of less than five years. Multiple interviewees expressed a desire for longer term funding from their donors, especially in cases where developers believed that their tools were finally functioning well after the arduous process of designing and piloting, and that more time was required for users uptake. One interviewee stated,

> *As an NGO, you may know, we don't really have finance like the government that they can collect tax money. So from time to time, to make sure that we have the budget to run the services, we need support from different sector, from the private sector, from international NGO, from foundation, from charitable individual. – Executive Director, CSO 3*

To mitigate this issue, many interviewees chose to obtain their funding from the private sector, namely employers and brands that rely heavily on migrant labor. One tool examined in this research that does this is a job matching platform where employers pay a fee to advertise their vacancies on the platform. This fee is then used to operate and maintain the platform and, most importantly, allow migrant workers to use the platform free of charge. Another example is an online supply chain auditing tool that charges international brands a fee to measure their lower-tier suppliers of indicators of exploitation.

The second sustainability challenge is technical proficiency. When CSO interviewees were asked whether they can continue the tool without their technology company partners' support, more than half said that they would be unable to continue. This demonstrates the importance of having technical proficiency in the team. However, it should be noted that simple digital tools such as social media channels require a smaller investment of financial and human resources to maintain. This can be a useful consideration in choosing the type of digital tool to develop.

The last challenge is intellectual property (IP). When asked about intellectual property, 13 interviewees had clear information on who owns the IP of the tool, while three were unclear on who owned it. This issue of intellectual property is important because it directly affects the sustainability of the tool. For example, one CSO interviewee gave an example of an issue they had with their digital tool which was co-developed with a technological company. Because the issue of intellectual property was not clearly clarified, the CSO had difficulties with maintaining the digital tool once the technological company no longer continued with the partnership.

> *Key learning overall, the first one is about intellectual property and that must be really discussed and clarified before signing any agreement with the developer and we need to understand in case we don't continue with the same developer – Chief of Party, Winrock Country CTIP Project B.*

Clarifying IP of a tool is also important in terms of data protection of users because, unless otherwise noted in the agreement, the party with the IP of the tool may also have ownership of users' data. Rigorous protocols need to be in place to ensure safe and ethical handling of these data. Ultimately, end users such as migrant workers will only be open to using digital tools and providing information on their work conditions when they trust that their personal information is being kept confidential and stored securely.

In addition to these sustainability concerns, digital tools should ensure that they have as high an engagement value as possible, meaning that they provide a reason for users to come back to. For example, a tool that serves to confidentially maintain a client's pay slip each month may be worth downloading more than a tool that provides information specific to one stage of the migration process.

To address these sustainability challenges, the digital tool should have a clear sustainability plan from the beginning that addresses the following points: 1) who owns the intellectual property of the tool and the data resulting from it, 2) whether the tool can be sustained should any implementing partners withdraw their support, 3) a source of sustainable funding of the tool should be defined as soon as possible, keeping in mind that the tool should be free to use for migrant workers.

As discussed previously, there are many types of digital tools that are currently being used by the CTIP community throughout Asia, including social media channels, chat applications, and full-fledged mobile applications. The next section will explore in detail each type of digital tool, their advantages, disadvantages and key considerations when selecting the best fit for a project.

TYPES, BENEFITS, AND DISADVANTAGES OF DIGITAL TOOLS.

This section provides an analysis and comparison between the three main types of digital tools that were examined in the research: mobile application, social media channels, and website. This section is structured based on the main considerations that developers have in considering each type, such as cost and maintenance, technical requirements, and accessibility.

Cost and maintenance

Cost is one of the foremost considerations when designing any intervention[13] and the cost of developing a digital tool varies widely depending on multiple factors. Mobile Applications tend to be the costliest as they require a specialized, technical IT skill set and are the most labor intensive. Throughout the life of the digital tool, mobile applications also require extensive and frequent updates and maintenance to ensure that they keep operating smoothly. One developer highlighted the amount of commitment required to make an app with an analogy,

> *A tech tool is like a child. It really is, or a dog, or it's not sort of something that you can build and then it's there. It requires love and attention, and you know, it's almost irresponsible to start building a tech tool without properly thinking through these things before you start. – Head of Global Supply Chain, tech company 2*

Because social media channels and chat applications utilize existing platforms, they require less technical knowledge from the developer, which can result in cheaper costs. However, frequent updating of content is crucial to ensure that targeted users will be reached, particularly in the face of stiff competition with other types of content on social media platforms.

The cost of developing and maintaining a website sits between the costs for social media channels and mobile applications. Websites require more knowledge and time to create and maintain than a social media channel. One interviewee explained,

> *Most migrant workers have smartphones, so Facebook is very easily accessible for them. Maybe they had a website. But a website cost quite a lot for the (implementing partner), so we have a lot of challenges on the budget. Because if you create a website it needs to be updated and maintained by many people. Yeah, that's the reason they focus on the Facebook page – Communication Officer, CSO 4*

Lastly, depending on the purpose of the tool, significant costs may be incurred during content creation and production. While this may appear straightforward, useful and well-packaged content requires thorough knowledge of the local context and multiple iterations. This is crucial to the accessibility of the digital tool, which will be discussed in the next section.

Directly correlated to the issue of cost is the technical expertise of the tool-developing team. As noted above, each type of digital tool requires distinct IT skills from the developing team. From all of the tools examined, full-fledged mobile applications are the most technically challenging to develop because they are platform specific and require that the developing team build them from scratch. This is followed by websites, social media tools and chat applications. It is crucial for the developing team to ensure that they have a technical understanding of the type of tools to be developed before committing to that type.

Accessibility

Accessibility refers to the user-design and functionalities of a tool that ensures that it can be used by people with a wide range of abilities. By carefully designing a digital tool's accessibility, the developing team assure themselves of the greatest opportunity to reach the widest possible end users.

Before considering the various types of digital tool and their correlated accessibility, it is worthwhile to consider the aspects of accessibility that are common to all digital tools. The majority of interviewees cited the importance of providing digital tools to migrants in a language that they can understand, both in their native language and through simple, uncomplicated writing. One suggested practice in this area is to provide a voice-over interface to ensure that migrants with limited literacy will be able to access and use the tool,

13 Bertram MY, Lauer JA, De Joncheere K, Edejer T, Hutubessy R, Kieny MP, Hill SR. Cost-effectiveness thresholds: pros and cons. Bull World Health Organ. 2016 Dec 1;94(12):925-930. doi: 10.2471/BLT.15.164418. Epub 2016 Sep 19. PMID: 27994285; PMCID: PMC5153921.

> *Definitely the tool has to be the language that the migrant understands. Nothing bombastic, very simple. Translation, of course, must be good and definitely an audio feature because in our survey when we did with the workers, we found that quite a number of workers actually can speak, but cannot read and write. – Director, CSO 5*

Each type of tool is fundamentally different in how they are accessed, stored, and used. Mobile applications, social media (Facebook), and chat applications (Line, WhatsApp, Telegram) require users to download the application in their phone first. Therefore, a user's phone must have enough capacity and internet connection to run the application. Meanwhile, a website platform does not require any further download but to have accessible internet connection. Conversely, mobile applications must be downloaded and stored on the user's device, allowing access without internet connection. This is advantageous in instances where users, in particular migrant workers, have limited access to the internet or must pay for their data packages. Interviewees noted that a mobile application may be more difficult for end users to access because it is not inherently self-promoting (in contrast to social media channels which exist on platforms that are used widely and constantly promoted and marketed). One interviewer said:

> *In my honest opinion, I think using a mobile application might not be a good way to go. It adds another level of barriers, like they have to promote the app in all the platforms like social media platforms and then redirect the user to download the application, right? I think for migrants where, let's say, there was another hypothesis that migrants are not very well verse online, like the digital literacy is low, et cetera. But we found that migrants actually have some basic digital literacy, and they connect with people at home through social media. So I think a better way to introduce these applications might be anything that is tied to Facebook or social media platforms. Instead of using a mobile application that requires them to download the app. – Senior Research Analyst, CSO 2*

It should also be noted that while social media provides a platform to reach migrants in a manner which they are already familiar with, their limitation lays in the fact that not all migrant workers are active on social media. Further limitations of access for social media and chat applications include government restrictions placed on certain platforms in various countries as well as the potential for content to be removed by the social media companies. For example, one respondent was concerned that the "report abuse" function that exists on many social media platforms are abused by actors who are intent on removing their content from the platform. One respondent, through a translator, explained,

> *The other thing is, Facebook is not (his) app. It is controlled by someone else. And if he entirely depends on Facebook, one day Facebook may block him or bar him from using those things because there are chances if some people just simply complain that this person is spreading hatred or something like that and that it reaches to Facebook, Facebook may block him. – Journalist, CSO 6*

Promotional Campaigns

Lastly, while not directly an issue of accessibility, a marketing campaign should be considered to promote the tool. The campaign should be designed to be specific to the intended users to maximize their likelihood of utilizing the digital tool and could include traditional media such as television or radio. One interviewee described a 4x4 truck that would go from village to village, promoting the digital tool through a PA system. Another interviewee reported,

> *Another is to spend on marketing and communications widely. And tell people in a local language in a different way. We may have to do some, you know, a street drama. To tell them that this is how it works, maybe we should be appearing on a television. So whatever the media you know that will help us to get more business and that will help us because we are a private company, the financial flow, the revenue is the key to sustainability – CEO, tech company 3*

The same interviewee highlighted the importance of promotion,

> *We definitely need to have a huge fund for outreach programs. It's not just an advertisement work, we have to gather people, we have to be in the place where people are gathered. - CEO, tech company 3*

To conclude this section, the table below summarizes the advantages and disadvantages for each type of tool:

TOOL	BENEFIT	DISADVANTAGES
Website	Less resources to create than a mobile application Allows for more customization/function than social media	Requires additional promotional costs Can only be access with internet connection
Mobile Application	Can be downloaded and used offline Provides the largest range of functionalities In some cases, it allows users to utilize their service without having to sign-in and keep their privacy	Expensive to create and maintain Requires additional promotional costs Requires that users have enough capacity in their phone to download
Social Media	Requires less cost, time, and technical knowledge to create and maintain Reach people in online spaces where they already spend time (Depending on the platform) has a direct chat function to interact with users. Users generally understand how it works and hence requires less piloting	Will not reach people who do not use social media Requires frequent updates of content Requires internet connection Has limited functionality Requires that users create an account which may compromise their privacy Privacy concern as data is not stored with the developing team

Piloting the Tool

Once it has been created, the next crucial step in the life of a digital tool is the pilot. In this phase, the digital tool is tested by a small number of users to ensure that it is functioning as it is supposed to and any difficulties and bugs are fixed before a full launch. By the end of the pilot, the digital tool should have a solid IT architecture and foundation to be added and iterated upon throughout its life,

> *One thing that we've learned from building a lot of tech tools is: You can try to start by building something with a very small amount of resources, but for it to really scale, you need to actually build it right from the start, and so it's much better to sort of invest upfront and get that really good architecture into place and iterate upon it. – Director, tech company 1*

Of the 18 interviews, 16 participants confirmed that a pilot on the digital tool was conducted. Depending on the type of tool and similar to the preassessment, the pilot could take many shapes and forms. It could be done through focus group discussions or interviews. The most important thing is to ensure that the intended users will have more than adequate opportunities to try the digital tool in condition that is as close to their intended use as much as possible. Several interviewees attested to the importance of regular testing and piloting to ensure continuous improvement for the users,

> *I think one of the things that we did really well is that we continually fed back, right? So we had almost a year probably of user testing and feedback, and that meant that we had many, four different reviews and changes. And I think that like a really big lesson would be have enough money to be able to do that. Because every time we changed it, it cost money, but it was important to get it right. – Chief of Party, Winrock Country CTIP project C*

Further, during the pilot, it is crucial to have a clear idea of the end result of the tool, because the piloting process should serve as a steppingstone to achieve that end. In other words, while it is crucial that the initial design process of the tool be flexible to serve the needs of the users, it also must not lose focus on the proposed product.

EFFECTIVENESS AND INDICATORS

Like all interventions, digital tools should have a concrete monitoring and evaluation framework to assess their effectiveness to ensure that they are meeting their stated goals. As noted in the limitation, this research only interviewed developers of digital tools and there is a risk of a positive bias for their own tool. However, the question of effectiveness was posed to understand common indicators used in digital tools.

When asked about how the effectiveness of the digital tool was determined, we received varying answers regarding indicators. This is partly because the types and purposes of the tools examined in this research vary widely. The following are common indicators reported by interviewees:

Number of downloads is among one of the most common indicators mentioned by interviewees. This can serve as a proxy indicator of reach, but it does not provide more granular information on whether people who download the tool are using it or how the tool has benefited them,

> *I think for the downloads, I found it a little bit difficult to use that to inform if the app is doing successfully, because for example app installs doesn't tell us if it's like a repeated install on the same user – Private Sector Engagement Specialist, Winrock Country CTIP project C*

Client surveys and case studies give more information of how the tool is used from the perspective of the users that can give an approximate indication of the effectiveness of the tool. Depending on the purpose of the tool, surveys and case studies can provide valuable information of how the tool can be iterated to fit the experiences of users more effectively.

Lastly, many technology companies cited feedback from implementing partners as their measurement of the effectiveness of the tool,

> *So those are more like, not formal interviews but more like regular catch ups that we have with the responders using the tool and from there we're able to get a pretty good view in terms of like how (the digital tool) is actually kind of having real life impact on the ground. – Manager, CSO 1*

This section explored the commonly used monitoring and evaluation indicators for digital tools and each developing team should ensure that they have created a rigorous M&E plan that will best measure the tool against its stated objectives.

RECOMMENDATIONS

The interviewees were asked to give their recommendations in developing digital tool, resulting in these recommendations:

1	The digital tool should be built in the simplest possible way to ensure accessibility and minimize resources needed.
2	The tool should allow ease of access for workers, in other words it should remove as many barriers to access as possible. For instance, it should be free to use for workers and not require an email registration or account log in, to include audio-visual feature for low-literacy group, and to operate with a simple language for easy understanding.
3	The tool should have a value-centered design that aims to solve a specific problem.
4	A tool does not necessarily have to stand-alone, but rather can be integrated into different types of tools. For example, a mobile application can provide a crucial function of the tool while at the same time social media channels are developed to increase awareness of the tool.
5	The tool should require as little internet data as possible, for example by avoiding unnecessary graphics that will translate to increased internet data borne by users. Ideally, digitals tools should have the capacity to function both on and offline.
6	End users should be consulted throughout the life of the digital tool. Their perspective and feedback should guide the development and iterations of the tool.
7	Ensure that the developing team has clearly defined the following: sustainability plan, IT plan, M&E framework, and intellectual property.
8	The developing team should have personnel with skill sets in both computer and social sciences to address the nuanced challenges of creating a digital tool in the development sector.
9	The type of tools developed should closely align with the purpose it is trying to serve. For example, a tool that stores workers' sensitive information should be a mobile application and an information dissemination tool should be on a social media platform.
10	Developers should design a tool that matches the level of digital literacy that intended users already have.

One interviewee summed up their recommendation as,

> *If you're going to develop anything related to technology: #1 make sure it's relevant, #2 make sure nobody else is doing it, #3 make sure people are actually going to use it, #4 make sure that it actually allows for the possibility of you being able to demonstrate impact, so make sure you do your focus group test, your data analysis of your pilot, make sure that it's relevant and don't oversell. – CEO, tech company 4*

ANNEX 1 QUESTION SET

For NGOs

BACKGROUND:

- Can you tell us about the digital tool that was developed (or that you support in the development) to protect migrant workers in the last 5 years?
    - Digital tool = tools on digital platform such as mobile application
- What does the tool do? What is the geographical scope of the tool?
- Why did you decide to develop this tool? What problem were you trying to solve?
- On which platform did you choose (website, App, social media channel, YouTube channel, others) and why did you choose this over others?
    - What factors did you consider? If you have evidence on why to develop on that platform? Which steps did you take?
- How would workers or businesses benefit from using this tool?
- What resources do you need to run and maintain the tool e.g., financial cost, staff time, external IT partner?
    - Does it need to be updated regularly?
    - Did you have a sustainability plan for this partnership and the longevity of the tool?
- Do you own the intellectual property (IP) of the system?
    - Who is the IT developer of the system?
    - Are you able to continue managing the tool without the developer?
- Was the tool piloted before it was launched? What were the findings? (Existing partners, Functions, Target users)

EFFECTIVENESS:

- How do you measure the effectiveness of the tool? How do you assess what's working & not working?
- What would you say is working well with the app?
- What would you say are some key learnings?
- What would happen if you no longer received support for the tool?

RECOMMENDATIONS:

- What would you do differently now if you were to do it again?
- Your recommendations when developing digital tools
- Anything else you want to share with us?
    - Do you know about any other system/tool used in the country or in the region?
    - Is it possible for you to connect us with your IT developers?

For the Private Sector

BACKGROUND:

- Can you tell us about the digital tool that you have developed, or developed in partnership with charities, non-profits, NGOs, or the UN to protect migrant workers? What were they and how did they work, what was the aim of them?
    - How did you decide this tool was the best solution over others?
- Can you give more details of the tool - What is the geographical scope of the tool?
    - Technical description of the tool?
- What was your role in developing it? Can you tell us about the process?
- How and why did you (together), or the other organization, decide what to develop/ what factors did you consider? Which steps did you take?
- Did you have to compromise on any aspects of the tool? For example, did they want something that was impossible to build? Or did you think something extra should be included? What were those aspects?
- What are the value propositions for your tool (objective of the tool, why workers or businesses need

them)? And how did you come to these?
- What resources do you need to run and maintain the tool e.g., financial cost, staff time, external IT partner? Both costs upfront and longer term operating costs per year
- Who owns the intellectual property (IP) of the system?
    - Is there any data protection policy even after the NGO stop working with developers?
- Was the tool piloted before it was launched? (Existing partners, Functions, Target users, Cost)

EFFECTIVENESS:

- What are some key learnings from your tool development process and the pilot: What's working & not working?
- How do you measure effectiveness/success of the tool?
- Do you have in place the plan for sustainability and scalability of the tool or platform? How do you upkeep them?
- How often do you update the tool?
- What would happen to the tool if it was no longer supported by the partner organization?

RECOMMENDATIONS:

- What would you do differently now if you were to do it again?
- Your recommendations when developing digital tools?
- Have you considered alternative activities to develop a digital tool to address the problem?
- Anything else you want to share with us?
    - Do you know about any other system/tool used in the country or in the region?

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