Off the shelf,
external contractors or
building your own application

When off-the-shelf is your best option for your information management needs

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Introduction

Whether you are working in humanitarian aid, emergency or development programmes your team needs to have access to updated information. When moving from a paper-based to a web-based solution or deciding that the spreadsheet solutions are not adequate for your needs, you might come across a challenging question.

What kind of software solution should I choose for my information management needs?

To answer this question, it helps if you first identify the solutions that are available out there.

There are plenty of options available for managing the information related to your work. You might consider developing an in-house software solution, hiring an external development contractor, purchasing an off-the-shelf solution or working with a free tool.

Developing your own solution means that you already have under your employment a development team that can develop a tool to meet your needs. This allows you great flexibility in terms of how the tool will work and look like and allows you to create software tailored to a specific need that your organization has. At the same time, it signifies having a dedicated, knowledgeable team of experts to develop, maintain and provide support for it. A prerequisite here is that you will be able to sustain the solution in case the composition of the organization changes or the development team is replaced.

Hiring an external development contractor means that you enter a relationship with a software development company which will develop a tool for your needs according to the requirements you set. This allows you to outsource the heavy work of building the software elsewhere but at the same time it puts you in a position of dependence with the contractor as you might need to ask for improvements and updates to the system as your programme evolves. Also, you need to have a clear understanding of each side's obligations regarding further development, bug fixes, documentation and support to the users and also have a plan in place in case the contractor becomes unavailable.

Purchasing an off-the-shelf solution means that you purchase a subscription or a licence to a software solution that comes in a ready-made, standardized version and that is available to use immediately, as it is. Off-the-shelf solutions allow you to save time and often money as you don't need to spend time developing and maintaining a software solution yourself or hire an external team. They usually come with a Service Level Agreement and support from the team responsible for their development. As such solutions are ready-made they might not be as flexible as you need them to be, to reflect your requirements. However, solutions such as ActivityInfo offer a wide range of customization options which allow you to design a system as simple or complicated, as needed.

Finally, there are **free, open-source tools** that can work as alternatives. These tools' demands and offers vary. Some tools might need technical customizations from your side, setting up servers or installing various modules and applying configurations. Other tools are more complex and you might need dedicated consultants to help you roll them out for your organization or programmes. The advantage in this case is that the tools come for free but the disadvantages include that technical support, servers and consultants often come with a high price and a long-term engagement. An example would be a three year implementation of DHIS2 which can cost more than $300.000 per year.[1] In this amount, all the above-mentioned are included, plus training the users to use the system, travel expenses of consultants etc. On top of that, sometimes you need further software development to include workflows and processes that go beyond the basics. This often includes plenty of direct and indirect costs such as additional IT salaries (ranging from €50,000 to €150,000 per year depending on location) digital certificates (e.g. SSL) and more.

The solution that is more suitable for you depends on many factors and it is important to consider various criteria before committing to a solution. Based on our experience from working with organizations of various sizes and with diverse needs for the past ten years, we created a list of criteria and key questions to ask yourself and your team. This list can help you decide which solution is a better fit for your requirements. The list is not exhaustive but it will hopefully provide you with some guidance.

Key criteria and questions when deciding for an Information Management solution

Team size

- What is the size of your team and what will it be in the coming years?
- Will the people working in your team be able to develop and maintain the solution you need?
- After developing this solution are there enough people with deep knowledge of the tool, to support the people who will use it?
- Will the time be enough to both develop the tool and do the actual work for which you developed it?
- If you go for an external contractor, will there be enough people to monitor the process and evaluate the result and the effectiveness of the solution?
- If you go for an off-the-shelf solution will it be quick to train the team to use it?

Working with a small team means more flexibility but at the same time few people might need to wear multiple hats. Even if you have the technical expertise in your team, you should ask whether time and staff is enough to undertake all the tasks that come with a software

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[1] The Global Fund. DHIS2 Maintenance and Strengthening Costing Tool.
https://www.theglobalfund.org/media/6499/me_dhis2maintenancestrengtheningcosting_tool_en.xlsx

development project. Working with a larger team, on the other hand, can signify having more resources and people available. At the same time, this might create delays due to lack of coordination or needing approval from various departments before proceeding. This might leave you with a rigid system in your hands.

Team expertise

- What kind of knowledge does your team have?
- Will your team have the same composition in the coming years?
- If you go for a free solution will there be enough resources to help your team configure it, maintain it or use it?

Maybe your organization's work is completely focused on running activities and creating impact based on your programmes, so the composition of your team consists mainly of M&E experts and project managers. When that's the case, allocating your resources to a development team might not go along with your mission or vision and might create delays to your actual work as well as unnecessary expenses.

Risk tolerance

Your organization's tolerance for risk is also a major factor as both internal and external custom software development typically have a substantial risk of failure or budget over run.

According to a report by [The Standish Group](#), 31% of software development projects will be canceled before they're completed and 53% of projects will run over budget by nearly twice as much (189%) as originally budgeted.[2]

Existence and size of an IT department

- Do you have a dedicated IT department in your organization?
- Does the department have the expertise to develop the solution you need?
- Will the department's composition remain the same in the coming years?
- What happens if you need to reduce the size of the department?
- Is the size of the IT department enough to be able to take care of all the aspects related to a software solution, such as servers maintenance, software development and maintenance, security, bug fixes and upgrades?

When building your own solution you need to make sure that the code is well-documented so that if some of your key developers leave you can still develop and work with the tool they have

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[2] The Standish Group Report: *CHAOS*, Available from: https://www.projectsmart.co.uk/white-papers/chaos-report.pdf

built. There are cases where, when the development team leaves, the know-how leaves with them and then the system they have built is abandoned. In such cases, all the effort was in vain. You should also consider all the relevant tasks that come with developing software and check whether your existing resources allow your team to work efficiently on that.

Budget for the year and for the next 10 years

- What is the budget of your organization for this year?
- What is the most efficient way to allocate it?
- Have you foreseen expenses related to contractors or for unpredictable changes that might be needed?
- Will your organization have the budget to maintain and support the solution in the coming years?

Sometimes software development comes with costs that are indirect. Maintaining your own software means that you need to have dedicated personnel working on that. Hiring external contractors means that you need to work with them for updates and improvements as the years go by. Keeping in mind unpredictable circumstances and addressing such risks with a long-term plan is a good idea when dealing with the systems that hold large amounts of information related to your work.

Working environment and requirements of your programmes

- Do you work in a quickly-evolving environment?
- Do you need to make frequent changes to your system?
- Is the system required to be on premise?

This is a very important factor which is often overlooked. Not all systems are designed to be updated quickly and easily. Some solutions need a deployment team to design and customize them to specific needs. Following that process the solutions become rigid and difficult to re-adjust. If your organization works in contexts that change rapidly, you need a solution that can follow these changes. Having to wait for a consultant or an IT expert to apply a change, apart from possible additional costs, also means that your activities might be delayed. This can be very frustrating, especially for people in the field who need to be quick and reactive. In high pressure settings, the question comes down to "How quickly can you react if you are still working on building that system which will capture all that you need?"

In addition, sometimes the circumstances are such that a solution developed and hosted on premise is required. This might be because a law or internal organization rules dictate it. In such cases, the inherent costs of hosting and maintaining such a solution must still be kept under consideration.

Answering key questions

When should you go for an in-house software development solution?

Taking into consideration the above criteria, an in-house software development solution can be a good fit when you need a highly tailor-made application to address very specific requirements, that possibly needs to be hosted on premise and you have the necessary resources to support it.
Necessary prerequisites often include:

- An adequate IT team size with a good understanding of the field's requirements and end users' needs.
- An IT team which is flexible and agile, knows the necessary technologies and tools to keep the system secure and updated and can quickly apply necessary changes to your needs.
- Knowing that you can count on permanent staff to maintain and support the code behind the solution.
- Having the budget to support such a team and solution for the long-term.

When should you go for an external software development contractor?

An external software development contractor can be a good fit when you need a highly customized solution to serve very specific needs and you don't have the team to build this solution. At the same time, you are open to enter in a relationship with a vendor and to monitor and work closely with them, whenever needed.

Necessary prerequisites often include:

- Having the budget to support such a relationship in the long-term.
- Having a fall-back, in case the relationship with the contractor ends or changes, to take on the project.
- Working in contexts where the programmes' needs do not call for big, urgent changes where the contractor's help will be needed.
- Working with programmes where high flexibility and applying changes on your own to the product is not a priority.

When should you go for an off-the-shelf solution?

An off-the-shelf solution is a good fit when time and being independent is of the essence. For projects or programmes that call for immediate actions, a solution that allows you to get started on the day of the purchase - or even earlier - is important.

Another factor that makes an off-the-shelf solution a good choice is being able to respond to the urgency of situations quickly. As the humanitarian landscape is ever-evolving, humanitarians often need flexible tools which can reflect the realities of the circumstances, with changes they can apply on their own. In these settings, a rigid system makes it difficult to iterate and adapt to such requirements.

Then, the lack of technical knowledge and an IT team makes off-the-shelf solutions very attractive, especially when there is no need for you to worry about servers, hosting and data security.

With some solutions, you can customize the tool to a great extent, meaning that you can adjust it to your needs and achieve as much as you would with a tailor-made solution. Having a very clear idea of what you want to achieve when selecting an off-the-shelf tool helps you avoid making a wrong choice.

ActivityInfo has been designed to offer organisations all the flexibility they need to create the solution they would have developed themselves, in the most cost effective way possible. By delivering a solution that allows you to create as simple and as complex structures as you need without any prior technical knowledge, we want to make information management, monitoring and evaluation, data collection and analysis accessible to everyone.

For more information, visit www.activityinfo.org or contact us at info@activityinfo.org.