A handbook for incorporating technology & ICT services into your organization’s processes and decision-making
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The opportunities for technology at NGOs have never been greater. All around us businesses are harnessing systems and information to increase productivity, make data-driven decisions, and run leaner operations. Greater sophistication in technology management means that organizations can take advantage of new trends such as cloud infrastructure at an ever-increasing pace, and deliver in minutes what once took significant capital investment and months of work. The mandate for NGOs is clear.

While rarely cutting-edge technology pioneers, many large and small NGOs are considering employing a more business-style approach to enhance delivery of their social missions; a component of that approach is careful but consequential business investments into core back-office information and communications technology (ICT) systems. In this atmosphere of ever more accessible technology and expectations for what ICT can deliver, what are the best ways to capitalize on these opportunities?

This handbook intends to guide small- to medium-sized NGOs on how to build a strategy for, manage, and implement back-office ICT systems and services to match their organizational needs. The guide leverages the learning from large NGOs and private sector companies and adapts them to smaller and local non-profits, where the needs are abundant but technology skills and resources are not. With the aid of resources and references, organizations should be able to architect a successful foundation to enable forward-thinking technology.

“The Johns Hopkins Center for Communication Programs is excited to see the release of the Back-office Toolkit. With stronger IT infrastructure, small- and medium-sized NGOs in the Global South can optimize scarce resources and be more effective in today’s increasingly digital world. The Back-office Toolkit will be a valuable tool to help organizational leaders and decision makers understand the broad array of available platforms, prioritize their deployment, and communicate with the teams and stakeholders engaged in the process of implementing them.”

James BonTempo, Director of ICT & Innovation, Johns Hopkins Center for Communication Programs (CCP)
This guide focuses on aiding small- to medium-sized humanitarian, relief and development organizations that want to introduce and use technology in their operations as a means to improve the efficiency, quality and the desired impact of their missions. It provides an overview of the role IT plays across core functional areas as well as insight from private companies and large international NGOs that have leveraged technology for their work and strategy. The guide outlines best practices for initiation, planning, implementation, ongoing maintenance of IT systems and incorporating future innovations.

The primary audiences for this guide are decision-makers and operations managers at small- to medium-sized organizations that want guidance on how to best incorporate technology and ICT services to enhance their operations and organizational strategy.
While this guide has been structured such that it can be read in its entirety from start to finish, we understand readers may want to home in on sections that address specific challenges. To help with this, we’ve identified a number of common scenarios and the corresponding “path” that includes insights for that given situation. Use the table below to pick the problem(s) and/or scenario(s) and get started!

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Acknowledgements

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Setting the Foundation

Understanding the Role of IT / ICT

We’re past the point of talking about technology as an optional extra for organizations. Small- to medium-sized organizations run into many of the same problems and should have access to the same solutions as a larger organization. It may be harder to tackle challenges with fewer resources, but the same rules apply; IT is foundational for efficient operational and project-orientated back-office systems.

Some smaller organizations may think organizational efficiency is only relevant for large entities, but what they overlook is that efficiency can have tremendous impact on organizations of all sizes.

Efficiency leads to more transparency and consistency, which are both extremely valuable to donors as well as future data-driven organizational planning. Standardizing systems and processes can also improve “organizational effectiveness through better information-distribution and knowledge-access by staff and organizational decision makers,” according to Cases on Information Technology and Business Process Re-engineering.
Learn your business - make the business case

The goals for internal IT should be treated in the same way as any other goal for your organization; every IT goal and project should be thought through in business terms and evaluated on the value that it brings to the organization in comparison to other alternatives.

IT leadership must carefully balance internal IT operational delivery with external management. Building trust with operational and program units means that IT must learn the organization and be comfortable discussing the goals, methods, history, language and details of the organization’s mission. Move away from being just “the network and server support people;” instead, attend operational meetings, learn about Monitoring and Evaluation, read the internal and external literature and experience the operations.

Communicate IT goals using the same channels and forums as all other goals to ensure they are given the same status and priority. Make goals easily relatable and consumable by customizing messaging as appropriate for different target audiences; this is particularly important when changes affect operations, since the impact will most greatly be felt by those on the ground. If the change(s) may result in a significant step change within operations and programs, be sure to acknowledge this and assess how that transition can be achieved in a more incremental manner. Consider these elements as dialogue begins, as it will ensure there is a valuable, open channel for feedback and engagement throughout transition.

Keith Berner, Director of IT
Freedom House

“Mission fit and cultural acceptance are more important than having the latest technology. And change-management planning and execution are essential for user adoption.”
Don’t dismiss resource and budget management

The first responsibility of IT leadership is to maximize the value delivered to the organization from the spending on technology. Even for small organizations, developing a formal budgeting process for technology departments, functions and projects enables accountability to and from IT and the business. In larger organizations, it is incumbent of IT leadership to understand the budgeting, allocation, tracking and management processes to ensure that IT receives adequate resources to be successful and garners confidence in the careful management of scarce funds. There is nothing more detrimental to an IT department than the perception that IT is a black hole or misusing precious resources.

Producing summary field office or project budgets also lets colleagues outside IT who manage donor dollars plan more effectively. Without that, IT runs the danger of constantly asking for a new system, server or technology as an urgent need, which puts pressure on the organization’s finances.

**Tips**

When putting the budget together for ICT, be very clear what hardware, software, services and staff are needed. Be prepared to justify every line. Do not accept any pushback like “We will not apply for this item as we do not think the donor will fund it;” there is no harm in asking the donor. Let the donor say “Yes or No” and not the people applying for the grant.

*Mark Hawkins, Global Field Technology Manager, Save the Children International*
Leadership: Roles & Responsibilities

Elect a champion to help drive a clear message of organizational goals

Take time to plan support for both IT champions and a team. Well in advance of big-change roll-outs, identify one to two IT team members close to the project to help prepare messaging and craft content to support buy-in and adoption; ask for volunteers at the start of a project to take on this role, or rotate responsibility so all teammates equally contribute at some point. Provide a case for action. Brian Taliesin of PATH suggests buy-in appeals be sent out over email by the technology champion or other leadership.

“Folks need to know why the change is made,” he says. “Often end users feel as if the decision [to introduce a new system] is making their lives more difficult, because they knew how to use the software before and now they have something different.”

Also, offer a place where curious individuals can learn more and offer feedback. Point people to where they can either learn more on their own – either online or through periodic network events or brown bags. This is as important as choosing the right product or having leadership support.

“There are some of those things that aren’t well attended,” says Taliesin. “When you provide the space for people to learn they aren’t going to necessarily go; [but] holding the space is important. So even though they weren’t there, follow up and say, ‘we had this session, it seems like things are going well for you all.’”

Tips

Key criteria for vetting your IT leader:
- Curiosity
- Transparency
- Accountability
- Vision and communications
- Relationship building

“At Microsoft, they had multiple leaders, so when we were rolling out a new product the executive vice president would be part of the overall challenge, and would challenge each other so that their teams were adopting at the level that was expected and rolling out and using it. A little competition can even help.”

Brian Taliesin, System Analyst
PATH
Establish a framework

Establishing a framework is important for creating a vision for IT services; providing guidance on the combination of roles and responsibilities by analyzing organization and functional areas; setting goals and priorities; and offering guidance on implementing IT service management.

There are many frameworks for IT management that can provide solid foundations for how to design IT functions or services for an organization. Perhaps the most widely used is Information Technology Infrastructure Library (ITIL), a set of practices for IT Service Management (ITSM) that focuses on aligning IT services with the needs of business.

ITIL describes processes, procedures, tasks, and checklists which are not organization-specific, but can be applied by an organization to establish integration with the organization’s strategy thereby delivering value, and maintaining a minimum level of competency. It allows the organization to establish a baseline from which it can plan, implement, and measure. It is used to demonstrate compliance and to measure improvement.
Governance clarifies IT value and role in business

Well-organized governance adds transparency and accountability from the ground up through IT operations and programming, to ensure that the organization is involved in and supports IT planning. It also makes sure that programs, operations and other stakeholders understand and are aligned with IT decision making. Poor governance leaves non-IT stakeholders with the perception that IT is a “black box,” with a lack of accountability and a question of IT’s true value.

There are many different models of IT governance, but they typically include at least the following elements:

- IT planning and results by the business: what are an organization’s IT activities, how those relate to the business and who is in charge of managing those activities?
- IT project management by IT and business stakeholders: who is involved in decision making?
- Metrics: mechanism and policies used to measure and control how IT decisions are made and carried out.

According to Digitalist Magazine¹, governance is driven by the following components:

- Responsibility: holding people accountable for a duty, task or decision
- Authority: establishing power to influence behavior
- Communication: exchanging information
- Empowerment: giving official authority to act
- Established measurements (metrics) and control mechanisms to allow staff to carry out their roles & responsibilities.

¹ http://www.digitalistmag.com/innovation/it-governance-what-is-it-and-why-is-it-important-04961
Governance

Governance of IT planning and results by the business

Overall IT planning and result governance typically happens with an IT steering, governance or review board, which is staffed by senior organizational leaders representing a broad constituency across the organization.

The governance board is responsible for input, oversight, review, and, potentially, approval of IT project plans, resource plans, budgets and results.

Members of the governance board should be responsible both to represent their departments’ needs in IT planning and to share IT successes, challenges and plans with their departments.

WHAT
A simple steering committee meeting, in person or online

WHEN
Once a month or quarter

SUGGESTED AGENDA
- Review recent IT successes
- Review and potentially approve upcoming projects
- Review resources and budgets
Governance of IT project by IT and business stakeholders

Project governance plays a similar role to overall IT governance: it ensures that the business is aligned with IT in goals and resources. It also brings transparency to the progress of the project and promotes joint accountability. In particular, it is important in smaller organizations that the governance process is designed to promptly communicate project problems and successes so they can be shared or re-mediated, as necessary.

Create a project governance framework to aid project decision-making and offer consistency to the process; this is a good practice to put in place for IT and non-IT projects alike. Wikipedia\(^2\) lists these as key elements:

- A compelling business case, stating the objects of the project and specifying the in-scope and out-of-scope aspects;
- A mechanism to assess the compliance of the completed project to its original objectives;
- Identifying all stakeholders with an interest in the project;
- A defined method of communication to each stakeholder;
- A set of business-level requirements as agreed by all stakeholders;
- An agreed specification for the project deliverables;
- The appointment of a project manager;
- Clear assignment of project roles and responsibilities;
- A current, published project plan that spans all project stages from project initiation through development to the transition to operations;
- A system of accurate upward status- and progress-reporting including time records;
- A central document repository for the project;
- A centrally-held glossary of project terms;
- A process for the management and resolution of issues that arise during the project;
- A process for the recording and communication of risks identified during the project; and
- A standard for quality review of the key governance documents and of the project deliverables.

\(^2\) [Wikipedia](https://en.wikipedia.org/wiki/Project_governance)
Choose "good" metrics that demonstrate performance against organizational and IT goals

Consistent metrics provide a way to manage performance over time, demonstrate IT value and for hold IT accountable. It is important to pick metrics carefully: not the flavor of the month, not too many, but those easily derived and produced to demonstrate IT value and performance.

Without defining IT metrics, IT is often at the whim of circumstantial narrative: for instance, is a system a failure if one person complains? If a system is unavailable for four hours after a year of uptime, is that within normal operating limits?

Tips

Good metrics are:

- Established by IT and the business;
- Just enough to provide value;
- Changeable but not ever-changing; and
- A common language to describe and assess IT’s performance and value.
Policy & Procedures

- Keep policies and procedures simple and to the point
- Documented procedures need to be clear, concise and, above all, easily accessible

Keep policies and procedures simple and to the point

Policies are useful tools for IT to ensure consistent delivery of services to end users, no matter the size of the organization. Some are mandated by various government or legislative bodies, or as a precursor to using certain vendor systems. Ask the legal department – or a legal resource – for the minimum requirements for jurisdiction(s) where the organization operates, as well as if there is any case law that needs to be observed.

Beyond fulfilling requirement, policies provide the opportunity to think and communicate strategically about why IT is run in a particular way. It also streamlines everyday decision making: “It’s not me telling you that you can’t send our database of donors via email: it’s the security policy.”

Minimum Policy Set

At a minimum, IT should develop two policies:
- Information Security
- Overall IT policy

Other useful policies include:
- User management
- User support
- Mobile device management
- Remote work

Policy Examples

- Information Security policy
- IT policy
- User management policy
- User support sample
- Mobile device management policies
- Remote work policy

Always include exceptions and waivers in policies, says Ali El Benni, Regional ICT Manager of Catholic Relief Services. Keep in mind that these policies will be used in emergency situations. Team members should be aware of policies and procedures as well as trained on them.
Documented procedures need to be clear, concise and, above all, easily accessible

It is important to develop a company manual (different from a process manual, which is explained in the Organizational Efficiency Through Process Improvement section) with procedural knowledge that evolves over time. Not as a one-time effort but as a living document that is edited and updated by the operations team as issues arise. This provides a simple way to drive consistency by thinking about an operation or procedure once then updating centralized documentation as it changes and optimizing execute time. It is important to select a simple collaboration tool. According to Carter Powers, of Dimagi, creating an organizational Wiki works well.

“Every time you need to run something, you create a checklist in a Wiki and you run through it,” he says. “Then if when the next person goes and does that and they get stuck in a step, they’ll figure out what the answer is and then they’ll update the Wiki.”

The idea is that the operations and administrative team will self-propagate the correct way to do certain tasks, and that an organizational operations knowledge base will organically grow from that living document.

Nadia Kazmi, Head of ICT of Africa Rice Center - CGIAR, suggests tasking the technical ICT staff with preparing the first detailed outline of the procedures, from a template. Senior management then reviews, cleans and provides validation before broadly sharing the manual, which can be later edited by operations. This gives the team ownership; without a strong buy-in or involvement, they will never follow them. Be very clear in each entry and remember that not all colleagues understand technical jargon.

A procedure set is especially important for international organizations hiring local or consultant staff. Be sure to review procedure sets quarterly. Procedure sets provide:

- An opportunity to provide a consistent user experience and service level;
- Reduced costs from re-inventing flat tires; and
- A consistent foundation.
Architecting a Strategy

- Developing a strategy is as important as the final outcome
- Create a strategy in phases
- Test your strategy for winning characteristics

The process of developing an IT strategy is a unique opportunity for IT to learn how best to shape the delivery of technology to enable the organization’s priorities and mission. The process of developing a strategy is as important as the final outcome, especially in smaller organizations that may have never thought of IT in a strategic way.

Even for small, one-person IT departments, planning for the future with colleagues and communicating those plans clearly will improve understanding and make it easier to execute a better technology experience.

Create a strategy in phases

When creating a back-office IT strategy, where to begin? Who is involved? How is collaboration fostered that will result in smarter, more innovative systems?

Phase 1: Understand Your User Profiles

- Where they work
- What they do
- How they work
- What they use today
- What they need tomorrow
- What they want tomorrow
Dedicating time upfront for organizational interviews to get to know and understand end-users is a first step to ensuring that solutions are appropriately designed and able to deliver the expected improvements. Like Human Centered Design (HCD), design methodologies cover significant ground when considering the needs of an organization’s beneficiaries; that same method and similar tools can be applied to include an organization’s internal users of back-office IT systems as part of the development process.

Creating personas is one way to gather and visualize the key end-user characteristics that are particularly relevant to back-office systems. Nesta’s DIY Toolkit provides the instructions and template for persona creation. For example, the personas involved in managing a supply-chain may be: John, the field officer; Jane, a field manager; James, an HQ coordinator; and Jack, an HQ director. Each of these personas will have different characteristics, including their interests, skills and priorities when engaging with the supply chain.

To further engagement and understanding of existing and potential users, consider applying some of the methods described in IDEO.ORG’s Design Kit, like the Analogous Inspiration, to get a fresh perspective on the problem or a Guided Tour to reveal a user habits.

Tips

A systematic approach is key: sit down with each department or a significant stakeholder, put aside biases, talk in non-technology language and hear from them on their needs and priorities. Ask how they operate. Ask what do they need, what they love, what they loathe. Watch them. Answer how technology can deliver value to them.
Architecting a Strategy

In Phase 2, define the deliverables that end users can expect from the strategy. What changes will end users see in their daily experience of IT? What is strategic, transformative and transitioned, and what is business as usual? What is the technology vision for the organization in five years and how does it align with the organization’s overall strategy?

<table>
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<th>Phase 2: Define What You Will Deliver</th>
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Architecting a Strategy

Finally, make it clear how the organization will experience the strategy. In what order will the strategy be disseminated, and based on what dependencies? How will users learn to use new or updated systems, and how can they be helped to adapt to the changes? How will the strategy be supported and where will users turn for help? How will IT communicate with users and be held accountable during the process?

Phase 3: Define When and How You’ll Deliver It

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<td>Change Management</td>
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Lastly, implement and revisit the strategy. It is important to conduct regular check-ins to review your progress against plan and leave room to revise through implementation. This is particularly important for IT planning, as the landscape is changing so rapidly, with new tools and services being made available all the time.

Schedule monthly meetings set to review recent decisions – or those in consideration – and map those to specific objectives in related functional areas. For a given IT decision, the tool’s requirements and purpose should clearly map to and help achieve particular organizational goal(s). Ensure representation from both IT and the appropriate functional area(s), and if these are the same people across functional areas, be sure to schedule separate meetings for each – allowing complete focus on a particular problem set at a time.

**Tips: What Makes Good Strategy**

Well-organized IT (and business) strategies share certain characteristics. The following questions should help test strategic plans:

- Is your plan aligned with the organizational strategy, goals and mission?
- Does it provides a unifying, actionable vision?
- Can it be achieved?
- Is the strategy defined in business or sector language? For instance, have you tied your strategy to sector-wide development goals?
- Can you be held accountable for its implementation?
- Does it clearly articulate the necessary competencies and any organizational changes needed to develop them?
- Does it sets priorities and define what you won’t do?
- Does it give you credibility to move forward with your ideas?
- Does it leave you flexibility to deal with new organizational circumstances such as growth, new locations, change?
Purchasing & Contracting

- Prepare for the blizzard
- Look to other peer organizations for guidance
- Leverage your mission
- Tap pro-bono opportunities for small, clear projects
- Understand IT contract specifics

**Prepare for the blizzard**

Once a person is identified as an IT decision maker, he or she should prepare for a blizzard of contact requests from vendors seeking to directly sell services and hardware, provide industry and sector updates and sponsor topic roundtables. Well used, this stream of information can be a very valuable resource to stay abreast of the latest technology options, and to network and build long-term vendor relationships, which could align with the organizational mission and offer steep discounting. Be sure to check the organization's purchasing policies to verify that there is no conflict of interest when attending vendor sessions.

“Smaller organizations should outsource as much of their technology management as they can. It is better to be served by firms with broad resources than to count on what is in the head of a single young techie. BUT, if you are going to outsource, you must have someone internally who gets IT enough to handle vendor solicitation and management. (Unsupervised vendors will very often go off the rails, serving themselves, rather than their client.)”

*Keith Berner, Director of IT, Freedom House*

**Look to other peer organizations for guidance**

There are many surveys and resources in the non-profit community that share costs for projects, software, services and hardware. These resources are great starting points to evaluate vendor proposals, prepare project budgets, or just validate your existing costs. Examples include TechSoup, CNET, and the NetHope Solutions Center.
**Purchasing & Contracting**

**Leverage your mission**

Most vendors offer specific non-profit discounts (usually 10-20%) and are often prepared to negotiate further, if they can work with an organization to create case studies or referrals to other actors in the sector. Those discounts can also go much deeper if your mission is being highlighted in the media.

There are also aggregator services such as TechSoup that collect software donations from vendors and make the program available to all non-profits.

**Tap pro-bono opportunities for small, clear projects**

There are a large number of IT professionals who are willing to donate their time pro-bono, and there is an ever-increasing number of directories and intermediaries to find them through. This additional capacity can be immensely valuable but there are a few things to bear in mind to make sure that both the organization and pro-bono professional get the most from the engagement:

1. Most importantly, be as specific as possible in scoping what is needed and why; if it is difficult to clearly articulate this, consider engaging the professional in some of the planning activities mentioned earlier in this section.
2. Scale back the identified scope, and then scale it back again, and then maybe again - really get to the root of what is valuable. Remember that these professionals (almost always) have day jobs and are donating their spare time to your organization, so use it wisely!
3. Get them to document and annotate everything, whether that means writing detailed requirements documents, adding tool tips to application screens or creating logical or physical architecture diagrams. Take the time to read, understand and question these materials, as this will help clarify what they’re doing and facilitate transition to others in future.
4. Validate their advice using the key questions listed in the Appendix for this section.
Understand IT contract specifics

IT is inevitably involved in RFPs and contracts for systems and services. These contributions vary from providing outlines to a procurement or legal department in larger organizations to writing entire RFPs and contracts when there is no such support. It is to IT’s advantage to understand the outlines and templates available free (or at minimal cost) online. Whatever the contract needs, a clear understanding of requirements is a great starting point: a good outline will help create a detailed scope of work, contract and, later, evaluation criteria for a project.

“Quite often, when I go to tender for a new three-year radio communications contract, I specify the radio kits we need to a very strict standard,” says Mark Hawkins, Global Field Technology Manager for Save the Children International. “I also invite suppliers to innovate and to submit alternative solutions in addition to what I have asked for. Sometimes we have built suppliers’ innovation into our standard solutions.”

When drafting IT contracts, be aware of these contract needs that may be “unusual” as compared to terms for other programs or other areas of the organization:

- **Damages:** Contract terms that govern outcomes when everything goes wrong. In particular, IT projects may have additional consequences of non-performance. For instance, delays in the launch of a critical project may cause lost revenue or penalties. The contract should include consequence language to mitigate those outcomes;
- **Acceptance:** Include business sign-off and testing provisions, particularly with regards to data quality.
- **Intellectual Property Provisions:** These can become complicated when dealing with open-source software;
- **Publicity:** Keep strict control in writing of the use of brand identify information; and
- **Ongoing Support:** Consider support and maintenance beyond the initial contract delivery.

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“Never sole-source contracts unless you have an extremely compelling reason to do so. Not only will competitive solicitations give you a broader range of choices, but you will learn about your own requirements in the solicitation process.”

_Keith Berner, Director of IT, Freedom House_
The Basic IT Operating Model

- Seeing the bigger picture
- Smaller organizations need a clear overall structural picture
- Map the IT experience

The following section talks about IT structural and organizational best practices. While smaller and medium-size organizations may have people wearing multiple hats, it is helpful to understand the overall structural picture – which a large organization might use – in order to understand trade-offs and where to focus resources.

For most end users, their experience with IT starts and ends with:

1. The device that someone uses to do their work.
2. The extended network they connect through to access the systems they need.
3. The services they receive when they need help.
4. The projects they are involved with.

Explore the subsections of “The Basic IT Operating Model” as a checklist; see which areas have been addressed, consolidated or overlooked.
Use best management practices, no matter the staff size

Depending on the size and decisions of the organization, the IT staff at a non-profit might be large, one person, or simply outsourced to a service. No matter the staffing model, there are several management practices that are particularly relevant to non-profit technology:

1. The metrics, standards and service levels for end users should be the same, regardless of whether the staffing is internal or outsourced.
2. To retain technology staff, it’s important to set goals and offer clear, written feedback about job performance. It’s also vital to provide opportunities for advancement and additional learning so that employees can stay current. IT staff operate in an environment where the perception (and often the truth) is that there are many viable alternative job options available.
3. IT staff, whether they’re employees or consultants, are problem solvers and enjoy being challenged to find solutions.
4. Outsourcing can be an all-or-nothing proposition or an organization can look to outsource commodity services and keep internal staff focused on higher value tasks, such as data analysis, integration of systems or business intelligence.
5. Agencies can provide particular value in finding qualified, skilled IT staff. In many cases, the salary lag from trying (and failing) to make an internal hire using standard channels ends up being more than paying an agency recruiting fee.

Keith Berner, Director of IT
Freedom House

“Mission fit and cultural acceptance are more important than having the latest technology. And change-management planning and execution are essential for user adoption.”
Clarify roles and responsibilities

Once organizational roles are clearly defined, structure a clear path of mobility for team members. Consistency in titles, roles and responsibilities helps people sort out what their natural progression will be in their career development; this is often already outlined within a larger NGO, but for small- to medium-sized organizations, start clarifying early.

“[Dimagi] ended up growing way too quickly to where we didn’t actually [have benchmarks in place]; we had sort of like the top layer [of executives] and we have the bottom layer [of managers] and we just sort of added the layers,” says Carter Powers, of Dimagi. “And we’ve just now had to sort of regroup and build out like an entire career matrix.”

An organizational chart defines the hierarchy of roles and responsibilities, but in order to support internal promotion, define a development model. Offer regular training, which is a centralized and standardized approach.

Tips

A distinct role of Business Relationship Managers is a key concept in larger IT departments that is often impossible to achieve in small- to medium-sized organizations. Senior technology staff typically adopts the responsibilities to partner with and understand the business and technology needs of different departments and stakeholders, since it is still as important to understand end users’ needs and plans, and the partnership to plan and deliver.
Opt for experienced hires

When teams are small, it is totally reasonable to hire someone smart and driven with a small amount of – or in some cases, no – specific experience; quick learners work well in this sort of apprenticeship model.

But as organizations grow, training someone to do everything is not sustainable and it becomes even more important to hire candidates with the right backgrounds for a given domain area.

“So, it’s become more important to get people with experience as we start to hire these finance roles because we need to be able to take them from like 80 percent understanding to 100 percent, rather than starting from the zero and trying to get to moderate [level],” says Powers.

Ali El Benni, Regional ICT Manager Catholic Relief Services

“Select the smart candidates and don’t afraid of hiring someone who is more knowledgeable than you. This person will be definitely adding new ideas and [proposing] constructive improvements to your unit.”
Infrastructure & the IT Foundation

- Set priorities
- Anticipate challenges related to back-ups
- Consider outsourcing
- Scope local options to maximize connectivity
- Move commodities to the cloud
- Support – don’t control – your users
- Establish perimeter control
- Get creative

Set priorities

The function of infrastructure is typically the first core skill of back-office IT and, despite recent innovations such as cloud services, it remains the backbone of the end-user experience, with responsibility for maintaining computing devices, running networks and operating applications.

A few factors make the experience for small and midsized non-profits unique; for instance:

- Given the typical physical locations of service delivery, (international) non-profits’ emphasis and priorities (and pain!) are often focused more on networks and connectivity than servers and applications;
- Communications infrastructure (the simplicity of voice, sharing, video) has a higher priority and is harder to deliver; and
- It can be much harder to maintain an effective security perimeter if you operate in multiple countries and contexts with staff of varying capacities.

Tips: Focus on what matters

For small and midsized non-profits, setting priorities is key. Not everything can be done well, which forces some key questions.

For instance:

- Do you need a phone system or does Skype (with credit to call long distance/international) work?
- Do you need physical cabling or will good Wi-Fi be enough?
- Do you need to monitor servers and send alerts? Who will respond if there’s a problem off-hours?
- How much security do you really need? Do you have truly private information?
- What level of backups of which information is most important to you?

As you make these decisions, record them for yourself and to communicate to your stakeholders.
Infrastructure & the IT Foundation

Anticipate challenges related to back-ups

So easy to forget and so hard to make work well, backups are a constant source of problems for IT departments. Fortunately, the days of tapes are now over and newer online and offline technologies offer a host of new ways to achieve data protection at affordable costs. Despite new options, it is still important when designing backups of critical data and planning for different kinds of recovery scenarios to set clear policies and communicate expectations to management.

Plan for common scenarios, such as recovering a lost laptop, addressing the failure of on-premise equipment, dealing with a partial building problem like a power outage or a whole building problem.

Set a target for how long the system can be down (Recovery Time Objective) and how much data you could afford to lose (Recovery Point Objective), especially if storage and servers for critical applications are self-managed by the organization. Communicate those.

Don’t assume that online system providers (like Amazon) protect data, and plan for what happens at cancellation of a given service. When planning and implementing backups, don’t forget the acid test: Restore the data to a test environment and ask business users to validate that everything is as expected.

Consider outsourcing

These days, every single type of IT staff or service, from leadership to helpdesk to analysis, is available in a variety of operational and sourcing models: hiring staff, consultants, or full service management companies. Different parts of IT can play a role, from “concierge” to online services through to traditional full-stack management with employee staff.
Infrastructure & the IT Foundation

Part of determining the IT operating model is to review costs for how to staff each of the necessary services and how to make an informed decision about the pros and cons of hiring. In deciding how to source a function or service, the following questions should be considered:

1. How important is this and how unique are the organization’s needs? For instance, it’s pretty simple to contract with a single vendor for an aggregate internet service contract across the U.S., less so across multiple international field offices.
2. Does the organization add any value compared to a vendor with a standard service offering?
3. Are there established organizational standards, processes and procedures or would it be easier to adopt a vendor’s?
4. Might the service need to grow or shrink rapidly?
5. For international NGOs: Is there a way to hire in-country at a much lower cost and with the additional benefit of providing services closer to users’ time zones?

With these questions in mind, an NGO can create a long-term cost model to evaluate how to source. Outsourcing is likely to make more sense for small- and medium-sized NGOs, especially those with variations in funding.

Scope local options to maximize connectivity

For international non-profits, provision of adequate connectivity to field offices is a perpetual challenge: a big enough pipe with decent latency and reliability has been a struggle for years. Fortunately, the situation is changing very fast: The number and quality of ISPs rises every year, there are more and more mobile options, and the available tools are getting better, too.

Don’t forget mobile alternatives! Mobile devices in many developing areas have a penetration and coverage rate almost fifty times that of traditional internet connections, which means that mobile devices and data cards are often available in areas that lack internet connectivity. Combined with responsive screen design frameworks for many online applications, mobile devices can often be used to access core system functions.

Tips

Bandwidth costs change so fast that you should plan to review and revise contract pricing (down!) at least once every 2 years.
Infrastructure & the IT Foundation

There are a wealth of educational resources available online. Do not be afraid to reach out to peers at sister organizations as well; they will often have great advice on the most reliable local ISPs, as well as how to work around connectivity challenges or potentially share space or bandwidth.

Move commodities to the cloud

Cloud services mark a fundamental change in how IT works, to the point there are very few reasons today for a small- or medium-sized NGO to buy what were once backbone IT investments like servers and storage. That is one of the reasons this guide doesn’t provide guidance on how to configure Linux, Windows or a RAID device. Cloud computing is not just Amazon Web Services (AWS), Azure and Rackspace but also a whole new sector of services that target specific problem spaces at organizations of all sizes. Cloud services present a generational opportunity for IT to improve delivery and reliability of end user services with access to on-demand systems with enormous computing power, while giving someone else the headache of management.

Technology-wise, cloud computing has been a huge help for NGOs, says Andrew Mutua, ICT Manager for CARE: “...It helps to not make a huge investment in servers and data centers. Just subscribe that service and use it when you need it – not all the time, not have it on all the time. Cloud computing is one of those aspects of shared services centers that has made quite a difference.”

Forward-looking IT departments can now transition from wrestling with physical servers, storage and backups to a more responsive group that focuses on managing information, solving business problems, strategy and holding vendors accountable for contract performance. Moving to the cloud also places headquarters and field offices on more equal footing.

Tips

One note of caution: Using cloud providers for infrastructure or applications means losing a layer of physical ownership and information protection. For organizations working with key vulnerable populations, that may be an issue requiring board-level approval.
Some of the considerations for moving to a cloud-computing model include:

- There are many services available at substantially reduced cost to NGOs, such as Office365 – take the time to look and ask around;
- Make sure you understand the limitations of discounts - often based on small numbers of users – especially in a fast growing organization;
- IT staff may not understand how to transition their skillsets and may need time and support to transition;
- The cloud doesn’t relieve IT from creating a strategy and formal procedures on how to manage and communicate and test change; how to manage security and permissions and how to host training to ensure users know how to access and manage information;
- Licensing terms are crucial – take the time to work with legal support (or ask sister organizations or find online) to develop a good understanding and templates for managing Software as a Service (SaaS) vendors;
- Cloud applications need even greater validation by field staff for international NGOs;
- Solutions typically codify best practices from organizations that have scaled successfully, providing opportunities to leverage step change increases in productivity;
- Costs for services such as AWS are often hard to model – but vendors can provide tools to help; and
- The need for network architecture planning can increase when using cloud vendors; there are often additional options for virtual private networking, virtual server locations (such as Europe or Asia) and multi-site backups for disaster recovery.

Tips

- Design your process and workflow automation plans with your department/team members. Use a technology that simplifies the automation and doesn’t make it problematic. If the selected technologies created errors and problems, staff will ignore these tools. This will also affect the trust relationship between the ICT/Applications Specialist and the end user.
- Automation is good, but doesn’t work everywhere.
- “Always mind the environment where you are going to apply this automation at. Always do cost analysis of any process automation you want to plan for. Go with what returns cost saving and make your work more efficient and effective.” – Ali El Benni, Regional ICT Manager, Catholic Relief Services
“We are big fans of using the cloud,” says Dennis Roark, President of Terra Ferma. “The problem is the cloud connection isn’t always readily available [in some development contexts]. We suggest making certain the software applications that you use are capable of storing the data then forwarding it to the cloud when a cloud connection is available. We like to have a small app embedded in the software that checks for cloud connectivity anytime the device is connected to a network.”

Support – don’t control – your users

IT departments traditionally have tried to control the end-to-end user experience – devices, phone service, security, perimeters, servers, backups and everything else. For a small- to midsized non-profit, some battles aren’t worth fighting, especially if there are limited resources available to IT, limitations based on the nature of the organization and a lack of new options. For instance, IT often insists on network storage drives and mutters when users save drafts of work to their desktop. Why fight human nature? Why not embrace an online whole-computer backup service that automatically backs up all users’ computers so their data is always protected?

Establish perimeter control

The use of cloud services, whether SaaS, Infrastructure As A Service (IaaS), Platform As A Service (PaaS) or any of the other myriad of options create additional complexity in setting and defending an organization’s perimeter security. Previously IT worried about physical firewalls at HQ and field offices and how to provide access to traveling staff. Now these need to be integrated with complex vendor and infrastructure cloud networks, with consequent routing, permission, identity management, and other challenges.

- The first step in organizing a strategy to control a perimeter is to work with business users to identify the organization’s information assets, their level of sensitivity, and the risks associated with them. What should be protected, how, who needs access to them, and what happens if there is a compromise?
- Think about defense in depth, not just a single perimeter. For instance, remember to protect core assets
Infrastructure & the IT Foundation

The world of technology evolves day by day and there is a constant blending of corporate and consumer options that have overturned a lot of the more traditional IT thinking. That means that there are often low-cost and creative ways to organize the delivery of technology at a small- or medium-sized non-profit; from a technology perspective, many non-profits look more like a tech startup than a corporation.

Against compromises which originate inside a perimeter, either malicious or a compromised staff computer. A perimeter layer around servers and databases is an industry best practice.

- A good set of perimeters is constantly tested and validated and upgraded against new threats.
- Perimeter control includes systems or policies to protect staff computers from malware, which constitutes most major commercial breaches.
- Security is a cost game – the first need is to implement sufficient security to deter common threats and to raise the costs of a breach.
- Guest access is often a weak point – either too lax or too complicated to the point that staff allow visitors onto the main network. A separate low-cost physical setup connection is often the simplest way to go – it doesn’t have to have the same uptime as the main network, and can even be used as an emergency backup in case of outages.

Get creative

The world of technology evolves day by day and there is a constant blending of corporate and consumer options that have overturned a lot of the more traditional IT thinking. That means that there are often low-cost and creative ways to organize the delivery of technology at a small- or medium-sized non-profit; from a technology perspective, many non-profits look more like a tech startup than a corporation.

Tips: Things to question

- Why provide cell phones when people already have one? Newer IRS regulations make it simpler to provide tax-free reimbursement to staff for using their own phones;
- Do you need wires? Wi-Fi only is a viable option for a modern office;
- Do you need physical servers? Cloud options and low-cost data devices should serve instead;
- Do you need a phone system? What doesn’t Skype and personal mobile phones provide?; and
- Want to hold video conferences? That doesn’t mean you need expensive, proprietary hardware. A cheap video camera and online conference service will likely do very well.
Map out services to optimize delivery

A helpful way to get started on proving consistent services to end users is to document all of IT’s roles and responsibilities, so the full breadth of service provided to the business is understood. A clear breakdown makes it easier to identify the best approach to service delivery – including determining which tasks can be self-service, which require remote support, which require on-site support, which could be ended and which could be outsourced.

Let end users know generally how devices get information from the software application to the cloud, as well as how to access cloud information. Dennis Roark, president of Terra Ferma, says a best practice is for staff to use
In providing services to end users, whether it be ordering a new computer or finding a solution to a problem, the most powerful and cost effective way to help is to start with self-service. A knowledge base of commonly found problems, simple and user-centric documentation and easily found ways to start common processes (such as ordering equipment or requesting time off) are great ways to empower end users. Not everyone will want to work that way, but for those who can, it’s the best answer.

### Use a ticketing system to set your team up for support

There’s nothing worse than for an end user to lose trust in IT due to a poor service experience. He or she may reach out for help and then be left wondering when the issue has yet to be fixed, if at all.

An informal system of support can work when it involves only one person that handles every operations task, but it requires tight management of his or her own time and backlog priorities – which, with high volume, may be overwhelming. Additional staff may be required and coordination doesn’t always go smoothly without the aid of a tool.

A ticketing system offers an added level of accountability for tasks, and convenience for users. Tickets hold a status – for example, open, in review or closed – and the ability to assign ownership and reminder alerts to specific teammates.

“And if you don’t close out that ticket, it always stays open in your queue,” says Carter Powers, of Dimagi. “Whereas when you have other task management systems or to-do-lists, if I’ll tell you to do something and I forget to remind you about it and you forget to do it, that thing actually just never happened.”

— Nadia Kazmi, Head of ICT, Africa Rice Center - CGIAR

“Acknowledgment’ is the key in service delivery. User needs to be acknowledged first, then serviced.”
Business Applications

- The key word is business
- Limit the number of systems
- Account for long-term costs, and strive to have a good sense of long-term ROI
- Shy away from custom-built systems
- Value interoperability and integration
- Open-source and free are not the same thing
- Gather those requirements
- Be prepared for the hurdles that come with change
- Training can make or break your application’s success

Applications are the third major area of IT that users interact with every day. A well-planned application portfolio – clearly communicated and well supported – prepares all staff to be successful at managing the information and participating in the processes they need to do their jobs.

While IT has to manage the basics like the cost and delivery of applications, thinking about applications as a portfolio makes it clearer to everyone. A portfolio perspective also implies both the need for an architecture as well as application (data) integration when that supports business requirements.

Tips: Portfolio elements

- What systems to use for what
- Where to find information in which system
- Where to get something done or access a process
- What’s going to change with systems in the future
- When it’s going to change
- How to influence or participate in the change

“Plan to increase your project time frame by 10-20 percent as challenges and surprises always happen. Design a scalable application. Plan for future expansion.”

Ali El Benni, Regional ICT Manager, Catholic Relief Services

The key word is business

Every application and project should be thought of in terms of the value it will deliver to the organization. In dealing with complex systems and talented vendor salespeople or developers there is a common temptation to overbuy or overdevelop functionality that is deemed “cool” but that will be rarely used and is therefore not worth the investment.
Business Applications

In any application project, it’s particularly important to clearly understand and document the business needs, the costs over the entire life of the application, the justification for the investment, and detailed requirements. These documents can then be used as reference points throughout an application’s implementation and operational life to develop metrics and validate the investment made.

Limit the number of systems

One of the first rules of IT management is to reduce the system count. Multiple systems typically create complexity: arranging support across multiple systems, defining processes between systems, moving data, learning multiple interfaces, overlaps of functionality, data reconciliation and departmental ownership questions. One of the most productive and rewarding things IT leadership can do is to reduce the number of systems that are in use. Investing in consulting services to provide overall system architecture review may pay off over the long haul.

Account for long-term costs, and strive to have a good sense of long-term ROI

While it is often hard to compile information and make future projects in a fast-changing non-profit context, it is important that IT takes the time to project the total cost of ownership for applications through their life-cycle. This may include: support, training, travel, maintenance, consulting, upgrades, project management, licenses, transactional costs, hosting, development, testing, documentation, and staff support to free up time for training and contingencies. Large or long-running project or system projections should always include contingency allowances for unknowns.

Shy away from custom-built systems

Build vs. buy is an ongoing topic of discussion in a world with more and more options in both areas: most non-profits lean firmly, and appropriately, towards buying commercial systems rather than building their own. Software development is typically not a core, non-profit business competency.
Business Applications

Building software requires its own infrastructure to be done well (development environments, repositories, processes, development management systems, product management competencies, testing and quality assurance, release controls, user experience design) and that can be expensive to set up and maintain. It is easier to simply buy and deploy pre-packaged software.

However, software development should not be thought of as impossible given the right situation. Money can just as easily be spent trying to shape a commercial system to meet unique requirements or by paying for expensive system consultants. In addition, most commercial systems will require some aspects of software development (reporting, database extracts, configuration of events and contingencies, business rules) that require “light” software development skills. In those cases, it is helpful to use development disciplines, such as version control and QA, to manage and improve outcomes.

Case study: Rare and Salesforce

Daniel Hayden, senior director of program services at Rare, says they have a lot of experience with custom-built tools and are now, choosing to build off an existing platform – which is Salesforce – and opting to give local country offices to option to use additional tools that they prefer on top of it.

“It’s a little bit easier to build incrementally on an existing platform than having your own platform that you’re constantly maintaining,” he says.

Custom-built systems – even with a limited scope – often can be too expensive to develop and maintain, so it is smart to leverage existing platforms, like Salesforce, to handle management and reporting in a much faster and cost-effective way.

Hayden also said that Rare already pays an on-going Salesforce licensing fee for most of the staff anyways, and that the development cost to build on it is relatively modest.

Tips

Try not to reinvent the wheel by creating new applications unless absolutely needed. Check to see what tools other organizations use. Is it possible to buy a “supported” solution off the shelf from a supplier?

Mark Hawkins, Global Field Technology Manager, Save the Children International
Typically, departments in any organization rely on information outside their core function. Finance needs to know who someone’s supervisor is for purchasing approvals. HR needs to know from which budget a new position is funded. Time- and effort-tracking needs project codes in order to map back to budgets. Contracts need defined signatory authority.

This means that growing organizations invariably face a decision about whether to work towards a “monolithic” Enterprise Resource Planning (ERP) system or pull together multiple best-of-breed systems. ERP’s offer advantages that everything is integrated and works together; best of breed systems usually have more focus and features for their specific function. It is rare to have only one system so most organizations face challenges of interoperability and integration:

- When I set someone up in HR, why can’t that create a network login?
- Why can’t we automatically combine salary and effort information to allocate costs to the right projects?
- My project information contains Personal Identifiable Information (PII); how do I make sure I adhere to our data protection and privacy policies, and when integrating with other systems (e.g. M&E), how to best ‘cleanse’ the data for PII?
Business Applications

Open-source and free are not the same thing

Non-profits organizations often select or are mandated to use open-source software in their program or core systems delivery. It is important to understand that there are many different types of open-source licensing terms, which govern how the software in question can be used, changed, configured or re-used. In planning for projects using open-source software, business users should be made aware that in looking at the Total Cost of Ownership for software, the support and implementation and training costs often dwarf the purchase price. Jump to the Appendix for guides and resources to ensure compliance when using open-source software.

“Open-source is not as trendy and doesn’t seem as relevant as cloud-based technology, but it’s free to use, and most of the simple IT tasks you hope to accomplish are highly documented. Within Microsoft server operating systems and open-source operating systems, there are built in resources for visualization. It’s simple to use and simple to understand, and it cuts down on cost. You can mix the two technologies at most levels, and in some ways it is advantageous to do so (e.g. Microsoft for Domain and Identity and Linux for storage and services).”

Jojo Almario, System Administrator IT Manager, IntraHealth International Inc.

Gather those requirements

Requirements gathering is a key step in implementing any application for end users, no matter the system’s size, complexity or the number of end users. The process of gathering requirements serves as the core basis for making decisions about vendors, system capabilities, user alignment, and process gaps, as well as making sure that business users are accountable for their own decision-making and implementation. Well-organized requirements demonstrate IT’s value to the process of systems implementation, in particular helping staff see the cross-operational nature of systems and process.
Business Applications

There are multiple sites and resources online with starter resources for requirements.

Tips: Common Mistakes

- Basing a solution on complex or cutting edge technology and then discovering that it cannot easily be rolled out to the ‘real world’
- Not prioritizing the User Requirements, for example ‘must have,’ ‘should have,’ ‘could have’ and ‘won’t have,’ known as the MoSCoW principle
- Not enough consultation with real users and practitioners
- Solving the ‘problem’ before you know what it is
- Lacking a clear understanding and making assumptions rather than asking

https://www.projectsmart.co.uk/requirements-gathering.php

Be prepared for the hurdles that come with change

Implementing systems properly means that IT is a fundamental part of changing behaviors and cultures. IT should not underestimate the complexity of change or assume that colleagues will receive change positively. At non-profits, most end users are over-committed, dedicated to the mission (not IT) and may not understand the specific benefit of a change to them. That means, as they weigh their priorities day-to-day, a shiny new technology is unlikely to rank highly. Unfortunately, there is also often a trust deficit: often-underfunded IT departments at non-profits do not have the best reputation.

When asking users to align with a change, IT should identify the types of users who will experience the change and understand:

- How they will perceive the change;
- How the change will objectively impact them in a positive or negative way, i.e., be disruptive of existing processes and ways work is conducted;
Business Applications

- What support they need to be successful;
- How they access those supports; and
- How IT will evaluate user progression.

In weighing these factors, it is critical not to make assumptions. IT leadership at non-profits have reported problems such as:

- Users didn’t like using the new communication software because they had to wear headsets and that caused problems with hair – solved by offering earpieces;
- Senior users didn’t like the new data warehouse instead of paper reports because they were too embarrassed to admit they didn’t know how to use Excel as well as junior staff – solved by offering basic Excel training to all staff;
- Email and scheduling systems that were not well received because certain cultures didn’t think it acceptable for a junior person to invite someone more senior than them to a meeting directly – solved by direct senior management instructions and permissions;
- Staff not back-filled to hand off day-to-day work and therefore unable to attend training – solved with temporary support hires; and
- Staff who refused to abandon a spreadsheet because it meant that everyone had to come to them for critical information – solved by collaborative process design and changed performance evaluation criteria.

Check in for feedback to better buy-in. This can be as short as just adding a new agenda item to a standing weekly meeting, but for larger change, schedule a separate weekly meeting to review usage and quickly log questions and comments. Also, leverage the IT champion and his or her helpers to seek feedback more informally, to ensure a full and honest account is collected; these opportunities for team reflection can drive course corrections and ensure minimal waste in investment.

Monitor the system to make sure levels of adoption are being met. An organization should have a business process matrix with metrics to help measure the “health” of all your systems; new systems can be then be
Business Applications

measured by improvement against these metrics. For supply chain dashboards, a common metric is on time and in full delivery (OTIF). System or operational metrics should be built into the system, not as an afterthought.

Brian Talesin of PATH says that, in regards to adoption, a simple and easy metric to monitor is the “last login” or “last update.”

“If you are expecting the user to update values monthly or log in weekly and it is not happening, you may need to do some more marketing and communications,” he says.

Training can make or break your application’s success

One area that is often overlooked at non-profits is training on technology. New systems are deployed, people are offered a website with a user guide or a couple of hours of training packed into the rest of their day, and then expected to be successful users of the system. Training is the single discipline that prepares most staff to use an application so it is important to understand the spectrum of people’s needs, the requested behavior change(s) and how to make those changes as easy as possible. More projects and new systems fail not due to technical issues; rather, failure comes from a lack of change management, misunderstanding of the cultural changes or poor training and support.

Tips

- Offer multiple ways to train: Some people like to go away with a manual on their own. Some appreciate a classroom. IT needs to accommodate them all to be successful.
- Offer multiple opportunities to train.
- Don’t assume anything: some staff might need training on how to use a mouse properly or understanding what a “wildcard” is.

“Everyone needs to understand the process. Teach them step one through the end. Don’t just teach them their step. If you understand ‘why’ you are doing something, you are more likely to be thorough.”

Dennis Roark,
President
Terra Ferma

“How do you get a new technology in place, is really a change management issue, less than a technical issue, to a certain extent.”

Elaine Change, TaroWorks
Project Management

- Weigh the need for a dedicated project manager (but always practice good management, regardless of staffing)
- Follow a PM structure
- Nominate an organized teammate to take on PM tasks
- Manage stakeholders
- Tell them three times in three different ways
- Simple wins

Weigh the need for a dedicated project manager

IT typically exists in two states: operational and implementing/changing. During implementation, project management will ensure that technology is successfully delivered and users are happy.

For small- and medium-sized NGOs, it is hard to justify a dedicated project management position when faced with urgent operational needs; that decision does need to be carefully evaluated in light of project budgets – does saving X percent by not using a PM justify a Y percent increase in the risk of the project failing? Even with no dedicated or part-time staff, there are still strategies to follow to harness the power of good project management practice.

Project management requires IT to take time to define:

- The justifications for, the governance of, the costs of, and the value of a project including identifying and managing the skills and resources for successful implementation; and
- The criteria for, the measures of the milestones / steps to, and the risks to achieving success; time management and trade-offs.

Follow a PM structure

Good project management is a set of disciplines that takes a project from the first articulation of need through implementation of the answer. For IT, where change management of end users is always the hardest challenge, good project management can ensure that people outside IT understand, appreciate and benefit from a project.
Project Management

For smaller organizations that lack the ability to hire dedicated project management, it is still possible to develop a project methodology: Hire an experienced project manager who brings previous documents and policies with them, and have them design a project management methodology that is easy to follow and delivers value. Train staff and follow that methodology without dedicated resources.

**Tips: At a minimum**

1. Form a steering committee (even if it’s a committee of one);
2. Perform a stakeholder analysis;
3. Design a communications plan around how stakeholders will understand status of the project;
4. Create a risk register to analyze project risks and how they will be managed - update the register as new risks are identified or existing ones mitigated;
5. Plan and manage the steps, activities, milestones, stage gates and decision points;
6. Create a resource plan that can deliver the project without requiring everyone to work four jobs (if existing staff are being asked to participate in the project for significant amounts of time, plan resources for how to backfill their regular duties); and
7. Report regularly and clearly to the steering committee, staff impacted by the project, and, if necessary, the whole organization.

Nominate an organized teammate to take on PM tasks

Highly organized people are excellent candidates to be internal project managers. Task him or her to design a basic project management methodology that can be followed by IT. Besides formal Project Management Professional (PMP) certification, there are also creative ways build staff project management skills. In particular, as is true for many IT functions, the community is often very generous with free or social support: meet-ups, webinars, online discussions or communities of practice are a great starting point.

“Prepare a basic information package indicating the deliverables expected of a project to have a common understanding on the aims and objectives. Pick and introduce the core team for the project; have it be comprised of the IT and programmatic staff. Do the task allocation separating tasks and picking on overlapping tasks.”

Zebedee Mkala, Technical Advisor for Community Programmes
Pathfinder International

Manage stakeholders

IT staff tend to assume that new and better systems and technology will be universally welcomed, that everyone will see the benefits, and therefore that the politics are positive. This is rarely true. Some staff will love the
Project Management

change, some will fear or oppose it for a variety of reasons, and most will be fairly neutral or mildly negative given that it is change to begin with. In order to create positive change and successfully deliver projects, it’s critical to map, understand, and manage the various stakeholders throughout the organization during the lifecycle of the project.

The starting point is a simple stakeholder mapping, where different individuals or groups of staff are identified (such as executive team, executive director, controller, program staff, and volunteers) and are then mapped to understand:

- Who are they?
- What is their power over the project?
- What is their influence on the project?
- What is their starting attitude to the project?
- What does the project need their attitude to be?
- What does the project need them to do?
- What does the project need them not to do?
- What is the plan to manage them (communications, meetings, documents etc.)?; and
- How often do you need to talk with them?

From there, a communication and management plan can easily be developed and modified during the project to make sure that important stakeholders understand the value and progress of the project. A well designed and implemented stakeholder management plan ensures that key staff champion the project and remain supportive through any setbacks.

Tell them three times in three different ways

Sadly, IT wins are often overlooked – for example, no one celebrates when they find that their email system is running properly; but, problems are immediately obvious. That means it is hard to maintain a positive ledger in
Project Management

the minds of end users, which can cause problems when requesting their participation in projects. For that reason, some larger organizations hire specific IT communications specialists to make sure that positive news about IT successes is heard. While a staff position is likely beyond the means of most small- and medium-sized organizations, the need to communicate is extremely strong. As a rule of thumb, a variation on the old business adage holds true: tell them three times in three different ways.

Tips: Say it again

1. Tell your audience what you’re going to tell them;
2. Tell them; and
3. Then tell them what you told them.

“Don’t write very long emails. Make your communication simple and clear. Differentiate between your audience types. Don’t hesitate of doing two different communications when addressing a particular topic. Each audience will enjoy the reading and absorb info better.”

Ali El Benni,
Regional ICT Manager
Catholic Relief Services

Simple wins

In order to have positive news to communicate, it is important both in large project planning and in overall IT planning to deliver simple and visible value to end users. A stream of positive news ensures that end users stay aligned with project and overall IT goals. It also ensures that IT stays connected with the user community and doesn’t, for instance, get lost in a large project for months while the organization wonders what is going on.
Security

- Be compliant with security requirements; includes both organizational policy as well as legal data protection (privacy) requirements
- User training in data security may be more important than high-technology perimeters

There is constant news of hacking, data breaches and cyber attacks against large corporations and government agencies; security is a daunting and complex problem for them, but also small- or medium-sized organizations. For that reason, it is often left ignored. But that is not an advisable policy, as it creates real and immediate financial and reputational risk for an organization and ignores a vital reason to drive IT investments.

"Think of security holistically. Use automation with human review."
Jonathan Tripler, Director of Operations and Technology, International Center for Transitional Justice

Be compliant with security requirements

Even for organizations that do not take online donations, that don’t need to meet the Payment Card Industry Data Security Standard (PCI DSS), that aren’t holding medical information and that don’t need HIPAA, there may still be legal requirements for security compliance. For instance, the Massachusetts 201 CMR 17.00 laws govern any organization that holds data about Massachusetts citizens.

User training in data security may be more important than high-technology perimeters

All good technology security systems have a fundamental flaw: people who must operate or live within them. For small and medium NGOs, user training in data security may be more important, and certainly cheaper, than high-technology perimeters. Staff will also appreciate the advice for coping with their own personal needs in a world full of identity theft threats.
Supporting Typical Departments

Addressing typical core needs

This section contains information on how to support the IT systems that bolster core areas within a non-profit organization. It is not a complete guide on how to implement system for finance or HR, but a breakdown of the basics to best partner with departments, structure systems and address typical core needs.
Program Systems

- Take time to do background research to understand challenges and needs
- Start simple – often people just need basic service first

Systems that directly support organizational programs come with functionality and labels as diverse as the array of non-profit missions themselves. In this category, we include:

- Specific systems, such as Electronic Medical Records or Case Management systems;
- GIS and pattern analysis;
- Land management;
- Lending systems; and
- Data Gathering systems, such as Magpi, CommCare, Kobo or ODK.

At many non-profit organizations, direct program systems often become disconnected from the IT department and may be advanced as separate initiatives, creating a shadow IT function. That separation has advantages in terms of keeping knowledge close to the ground, but also has disadvantages that may limit the maturity of solutions delivered or introduce potential risks – like staff or beneficiaries’ information leaks.

Finding a balance between encouraging program innovation and rapid solutions while benefiting from IT’s enterprise approach is a complex mix that should consider:

- Flexibility
- Security
- Standards
- Local knowledge
- Capacity
- Cost
- Change management
- Cross-systems integration requirements
- Speed
- Risk
- Innovation

As the organization matures or grows, IT can play a role in helping to create bridges, common contracts and shared services among different departments and programs that have the same technology needs.
Program Systems

Take time to do background research to understand challenges and needs

Although many organizations create specific ICT4D or ICT4P (Information and Communications Technology for Development / Programs) groups, there is still room for IT to bring value to those systems efforts, especially as systems in use by non-profits mature into the enterprise space. However, in order for IT to add value to the delivery of program systems, there are two primary prerequisites: First, IT must deliver successful basic back-office systems, and second, IT must understand the organization’s mission and how to contribute to it. IT leadership and staff should create time to read annual reports, technical materials, attend brown bags or other technical gatherings, meet with program staff and generally learn their pressures and challenges.

Start simple – often people just need basic service first

Program staff who have worked at a small- to medium-sized NGO for any period of time will likely have low expectations for how technology can help them.

In many cases, the best way to improve the life of a programmatic staff in an organization will not be the latest and greatest; rather, focus on improving the basics like communication systems or back-office processes to free staff from cumbersome minutiae. Well-run basic technology builds credibility with expert program staff to discuss needs, strategy, and the potential of new ideas and approaches.

When talking with program staff, don’t forget to listen.

“Establish your (systems) model and have it well defined in conceptual framework so that every one can understand all modules including data capture, security and utilization.”

Zebedee Mkala, Technical Advisor for Community Programs, Pathfinder International
Monitoring & Evaluation

- Use the new breed of simple yet powerful tools to upgrade reporting, being aware of the limitations of current data sets
- Remember core needs when evaluating new data collection techniques
- Explore opportunities to leverage and contribute to the increasing wealth of global research
- Integrated M&E systems are a viable option but work best when deployed in an organization that already has a systematic approach to M&E
- Consider leveraging external expertise to approach M&E systematically, using ad hoc tools to get started

The pressure to get Monitoring & Evaluation (M&E) “right” in today’s high-tech and data-hungry world can prove daunting for any organization. Many smaller organizations track their results quite well without sophisticated tools. However, M&E systems may make sense for cases of accountability and efficiency.

There are five core areas in which ICT-based M&E tools offer opportunities:

- Streamline data flows and analysis systems
- Facilitate access to key information
- Provide analytics and visualization capabilities to facilitate decision making
- Knowledge building
- Reporting data in a fast, reliable, secure and engaging manner

M&E has seen an explosion of tools that simplify the job of collecting and managing data and indicators -- especially in international settings. There are now literally hundreds of tools available to manage project data from “simple” data collection tools to complete enterprise-size systems that integrate data collection into complete management packages. These tools can be broadly classified in four categories:

1. Data collection tools that provide a central hub that allows users to create forms that can be easily deployed to mobile collection devices and which transmit the results back to the hub. Examples include Magpi, Ona, Kobo, mFieldwork;
Monitoring & Evaluation

2. Tools to manage project indicators and data points (and sometimes more), e.g., ActivityInfo, DHIS2, DevResults;
3. Reporting tools that can visualize data from multiple sources. These span from the typical Gartner Business Intelligence tools to more focused geographic information systems (GIS) systems such as ESRI; and
4. Tools that provide additional features focused on specific sector needs and which can rise to complete sector management packages, e.g. OpenEMIS, CommCare, Primero, AMIS, OpenMRS.

Use the new breed of simple yet powerful tools to upgrade reporting

Reporting tools may be the easiest way to begin integrating technology into programs. With some quantitative data and a modicum of tech savvy, just about any development practitioner can take the sophistication and aesthetics of their reporting to a new level. The main limiting factor with respect to reporting is the quantity and quality of data and the reporting requirements that managers are beholden to. Similarly, without a robust data collection methodology, even the most sophisticated tools will be unable to make data more used and useful. As the old adage goes: garbage in, garbage out.

Remember core needs when evaluating new data collection techniques

Tools for data collection have perhaps seen the most dynamic integration with technological solutions in the development industry. The movement away from traditional pen-and-paper for data collection seems inevitable for a number of reasons, including added functionality and reduced costs. This does not, however, mean it is without its own challenges.

Michael Trucano, senior ICT & Education Specialist at the World Bank, explores frequently asked questions about data collection tools, many of which revolve around available software applications, their advantages and disadvantages. He advises that IT managers “define the scope […] to which [ICT] data collection efforts might be beneficial and possible.”
Monitoring & Evaluation

M&E implementation present some of the most complex change management challenges for non-profits:

- Staff may only be used to collecting data on paper;
- For international non-profits, there may be requirements or limitations from government, ministry and/or consortium partners to consider;
- The specific indicators and their meanings may not be well understood across the whole organization;
- Data may be collected and need to be visualized in changing locations outside an office with significant connectivity or environmental challenges; and
- The people who collect data are often volunteers or short-term staff who require additional or modified training and supervision.

Given these complications, it’s vital to avoid “shiny object syndrome” and the latest bells and whistles and instead make sure the basics building blocks for systems implementations are well established:

- What are the goals and outcomes of the system?;
- Are the reporting requirements well understood and does the data model support them?;
- Who is collecting and visualizing data, and from where?;
- How much is the total investment?;
- Are stakeholders engaged and empowered from the beginning?;
- Is there a human-centered design methodology in place?; and
- Are the underlying business processes well established, e.g. use of data, data quality, approvals, indicator changes?

Explore opportunities to leverage and contribute to the increasing wealth of global research

The emergence of the concepts of big data, open data and increasing recognition of the importance of program monitoring has been matched by rapid growth of tools that allow faster, deeper and more reliable
Monitoring & Evaluation

analysis of the wealth of information at organizations’ fingertips. The ready availability of sophisticated analysis tools permits development organizations of all sizes to engage in robust primary research, thus contributing to their learning and that of their peers. More importantly, such research can help build a scientific basis for much of the work that is being done globally, helping us focus on what works and eliminate what does not.

Integrated M&E systems work best when deployed in an organization that already has a systematic approach to M&E

Putting it all together, integrated M&E systems provide a comprehensive solution for gathering, managing and making sense of data, generating knowledge and helping organizations analyze and report this knowledge.

Many organizations have also chosen to go it alone and create systems from scratch, although the emergence of so many quality off-the-shelf systems increasingly makes this a poor investment. So what is the catch? Well, implementing a robust and integrated software-based M&E system will always require basic ICT competence. Magic M&E buttons don’t exist. Also, to avoid the garbage-in-garbage-out trap, reasonably robust M&E systems are needed to provide the foundations on which these systems are built. Organizations that have successfully implemented these types of solutions typically have several things in common:

• They operate an organization-wide system that collects performance data from programs;
• They maintain a high level of IT literacy;
• They are comfortable using quantitative and qualitative data collection tools that track data that feed into analysis tools; and
• They have a structured approach to M&E (and staff resources) for program/project activities, using logframes/PMPs/results framework to guide both individual projects and global programming.

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Monitoring & Evaluation

If an organization already has an established M&E system in place, using an integrated M&E system tool makes a lot of sense.

Consider leveraging external expertise to approach M&E systematically, using ad hoc tools to get started.

Many organizations find that the process of adopting an ICT-based M&E system spurs them to develop a more systematic approach to M&E, helping build the internal processes related to data collection and standardized reporting and analysis. Consider using advisory services, including outside assistance from consultants and developers that can facilitate participatory processes that build on an organization’s strengths, mitigate weaknesses and help articulate needs.

It is important to note the trade-off between an integrated M&E system and ad hoc tools. While integrated systems try to provide a one-stop-shop for M&E needs, requirements that have not been prebuilt into the systems can be difficult to meet; this is the value of using ad hoc tools. Accordingly, when shopping for an M&E system, be sure to consider not only the system’s functionality but also how data can be exported. This will provide the freedom to perform custom analyses and reporting – or switch systems all together.
In this section we refer to Business Intelligence (BI) tools, but we are really talking about tools that help you to get maximum value out of your data. We are talking about tools that will help you gain much deeper insights into your data and enable better and faster decision-making based on the facts and needs coming from operational work across the entire organization. These tools will facilitate getting the right data to the right people at the right time and tell interesting stories about your organization’s activities and achievements – it’s the new world of agile analytics.

This is important as people’s expectations are changing, and individuals, donors and organizations are increasingly expected to be able to access and query data for themselves (often referred to as data democratization).

“Data is changing the conversation—in boardrooms, in the media, and in social media. People are visualizing their data to explore questions, uncover insights, and share stories with both data experts and non-experts alike. As data usage grows, even more people will turn to data with both professional and personal questions. And employers will look for candidates who can think critically with data. Visual analytics will serve as the common language, empowering people to reach insights quickly, collaborate meaningfully, and build a community around data.”

Tableau, Top Trends for 2016

Gone are the days where you need all your field data in one big database

With new BI tools, you don’t need all your data in one big database. You can connect to each dataset where it lives (both inside and outside of your organization), and combine and blend it in a multitude of ways in

“All the data in the world won’t help if it cannot be displayed in a way that is easily interpreted.”
Patrick Yurgosky, New York University, June 2012
Reporting, Analysis & Business Intelligence

order to garner new insights. This opens up a whole host of opportunities for engaging with big data and open data – putting more information than ever before at your organization’s fingertips. BI tools can be used for everything from data-driven organizational planning to donor communication.

As has been mentioned throughout this report, an initial requirements-gathering phase is key. For example, if you plan to use BI tools for program evaluation, you will need to have a strategy for evaluation in place that details how you want to monitor your programs and what metrics will be used. BI tools can’t help you collect the right quantity and quality of data, and they can’t ensure that staff will report this data in a timely fashion. However, if a strategy is in place detailing how to properly collect and communicate program data, then BI tools can transform insights obtained from that data, and communicate them in intuitive and engaging ways.

Therefore, before choosing an IT system and collecting data, think about the what, why and how:
- What will be the end product and who will be using it?
- Why are you collecting the data?
- How will the data be analyzed and used?

Remember that it is vital that data are reliable and easy for users to understand if you want the organization as a whole to engage with it. If you plan to work with big data, think about how the data should be managed to optimize performance. Trying to analyze and visualize big data from Excel or CSV files will be very slow, and there are many other platforms and databases that can be used to help organize data in a way that will facilitate faster and more intuitive analyses and visualizations.

“Not every organization needs a BI tool, but if you have a solid strategy for program evaluation and monitoring and are already capturing the raw data you need, but struggling to analyze data and make use of it in your organization, these tools might be a good fit.”

Patrick Yurgosky, New York University, June 2012

In order to combine and blend data, there needs to be common variables between datasets, and consideration needs to be given to whether it makes sense to combine the data.
Reporting, Analysis & Business Intelligence

Communication is key – think about whether it would be good to speak to a statistician before collecting data to ensure that it is collected in a way that will enable meaningful analysis.\(^5\) If those collecting the data will be different from those who will be analyzing the data, set up a meeting to ensure that the needs of all parties are understood from the outset.

Invest in training of staff in order to get the most out of your systems

As with any IT system, organizations will need to consider how to train staff on the use of the new tools; whilst BI tools are designed to be intuitive for all staff, there will likely also be a need to train IT staff on configuration and maintenance.

Think about where your data will live once it is collected, and how you will extract it from the tools used for data collection and transfer it to the BI tools for analysis and visualization. If data will be collected and downloaded on a continual basis, then consideration could be given to automating the extraction of data from the data collection tool to the analysis and visualization mechanism. You will also need to think about if and how data might need to be checked and cleaned – i.e., what are the possibilities of errors being made in data collection, and what will need to be done to the data to account for these errors before it can be meaningfully analyzed? Who will do this? The process would go something like this:

1. Raw field data are collected;
2. Data are cleaned and made easier for non-specialists to understand (if this will be done on an ongoing basis, consider whether some code could be written to automate this process); and
3. Vetted and cleaned database can be shared across the organization for further analysis and visualization (more information: [https://en.wikipedia.org/wiki/Data_warehouse](https://en.wikipedia.org/wiki/Data_warehouse)).

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\(^5\) Statistics Without Borders will provide best practice methods and volunteers to non-profits on data collection and analysis – see [http://community.amstat.org/statisticswithoutborders/home](http://community.amstat.org/statisticswithoutborders/home)
Finance, Budgeting, Accounting & Supply Chain

• Users, controls, data, processes and future growth
• Current state

The core of any financial system is the chart of accounts – it drives all transactional coding, all project and departmental reporting and all external compliance. It is to every IT department’s advantage to understand how accounting and finance have constructed the chart of accounts and how the broad classes of funding and expenses are treated (e.g. unrestricted, restricted, temporarily restricted, overheard, direct costs, indirect costs, overhead, management and general). Learn the basic financial terminology like journals, vouchers, accounts, ledgers and how the organization has designed its financial controls, such as signatory authority.

As an organization becomes larger, more complex and operates in multiple locations or countries, it is also useful to understand how IT can work with finance to fine-tune the coding of purchasing to gain a true picture of the overall technology spend of the organization – for instance, by segregating out different types of communication, hardware, systems and software purchasing.

Financial transactions are also typically the starting point for many common organizational processes and it is important to spend time understanding and mapping the current and desired future state of each financial process before engaging in technology selection or configuration.

Tips

You need a system that allows you to document in a way that you can report to your management and donors. Take the time to setup a good and simple general ledger.

Jonathan Tripler, Director of Operations and Technology, International Center for Transitional Justice
Finance, Budgeting, Accounting & Supply Chain

Users, controls, data, processes and future growth

For an IT strategy related to finance and accounting, focus on the flow of data. Consider which users will be submitting data – perhaps all individuals will submit expense reports or only one bookkeeper will manually enter the data. For a system that involves participation by the entire organization, give extra attention to the user interface, so it is easy to use by the masses.

Teams will grow and expand, and then that usability becomes extremely important. Even if an organization only has one person in charge of finances and accounting now, try to anticipate team needs as growth reaches particular milestones – and plan for that. As an organization grows, departments become service centers to each other and strategy should account for that interplay; IT is often the only one experienced at that level thinking.

“If I had [a] vision of the future of, ‘Oh, we’re going to open four new offices, four new systems,’ I probably would have switched much earlier in our history to a more complicated flexible IT system and you end up sort of switching in the middle when it’s super painful to do,” says Carter Powers, of Dimagi.

Determine when that pain point should arise, and set up steps ahead of that to evaluate new tools and reevaluate requirements for them. Even if it may seem that it is more expensive to implement an enterprise solution that seems too robust for current financial needs, a design can still include them to avoid playing catch up in the future, like patching things together after the complexity ramps up and it is too late, Powers says.

“I can’t over emphasize how certain things that are super painful are the best way to learn what to do on the finance and accounting side.”

Carter Powers, Chief Operations Officer
Dimagi
For many non-profits, with a simple financial model, QuickBooks or the equivalent has served and will continue to serve well. Even some larger non-profits use similar types of simple systems to run field offices, only using more powerful software at a headquarters level.

Finance systems, given the risk and needs for controls and compliance, have followed a slower, more conservative path than other systems areas. However, there are now a number of vendors who provide SaaS non-profit-specific packages that understand the concepts of non-profit and fund accounting (and beyond). Depending on the needs of the organization, there are now SaaS ERP systems that offer complete functionality for finance, purchasing and supply chain, HR and CRM.

“Ensure that financial, budgeting and procurement processes are as easy as donor requirements will allow,” says Mark Hawkins, Global Field Technology Manager at Save the Children International. “Overcomplicated systems lead to delays in implementation.”
Fundraising & Constituent Relationship Management

- Learning
- Current state

In terms of software and services specifically for non-profit operations, fundraising and CRM have the longest history and most varied application and support offerings. Options can include those developed from the beginning with non-profits in mind, or others that have a natural fit and overlap with sophisticated overall market Sales and Advocacy products.

Four factors make fundraising and CRM software potentially the most complex spaces for non-profit IT departments:

1. CRM and fundraising are the lifeblood of many non-profits, with the most visibility, pressure, and developed metrics – especially for events or at times like year-end;
2. The nature of fundraising means that there are complex business requirements and data models to cover all the nuances of a long-term relationship with different types of people and organizations – everything from web content systems, to international payment gateways, to tracking and realizing recurring pledges over extended periods of time;
3. For many non-profits, fundraising and the consequent handling of sensitive donor information have the most complex and expensive external compliance and security requirements such as PCI, and MA 201 CMR 17. This can be further complicated by the need to handle information from donors in multiple countries each with its own regulatory requirements; and
4. Due to the maturity of the vendors and software there are a wide variety of solutions that offer different strengths and features across the spectrum of business needs.
Fundraising & Constituent Relationship Management

Learning

There are many ways for IT professionals to learn about the diverse fundraising and information needs so that they may successfully manage relationships with all the various types of donors: small digital donors, large legacy donors, foundations, corporations, institutions, and the public sector. Given the maturity of the market, larger fundraising and CRM software vendors such as Blackbaud and Salesforce will typically have training modules and free trial sites that will provide foundational skills. Like any other system, nothing replaces the need to develop a trusting relationship with fundraising staff through careful listening to understand their jobs, their business needs, and their requirements. There are also online user groups and meet-ups in many locations for fundraising and systems staff.

Current state

In the last few years, most Fundraising and CRM systems have moved to offer either complete online SaaS solutions, or online components with integration options for modules such as email contacts, mail contacts, campaign management, analysis, segmentation, tracking and events management. Besides the traditional systems such as Blackbaud’s Raisers Edge, the market has seen newer options that are adopting existing features for fundraising functionality, such as Salesforce.

Tips

You can learn a lot about your organization’s approach to fundraising by becoming a donor yourself. Even a small one time or recurring amount will show you what the donor experience truly is.
Human Resources

Human resource information systems are often considered luxury items at small- to medium-sized non-profit organizations. However, there are very good reasons to track human resources. As with other areas of the business, IT can benefit from taking the time to ask about and learn how HR thinks: what are the key processes, drivers, deliverables, and metrics? What are the pressures? What is good HR practice?

It is often harder for an HR department to make a very solid ROI case for investments in HRIS systems. For fundraising staff, there are direct revenue targets. For finance, easy tie-ins to spending. For supply chain, savings in purchasing costs. For HR, while there may be savings in recruitment, additional retention or risk avoidance, the calculations are less clear. IT can assist HR to make a case for appropriate systems.

Online solutions make it both practical and affordable for small business to implement comprehensive HR solutions. Solutions can be limited to a simple employee database to store basic employee data, keep track of hours, performance statistics, etc., to systems that cover everything from hiring to separation and everything in between. While consulting the HR department on requirements is the obvious choice, there are online guides that can be helpful in matching requirements with available solutions.
Communications, Collaboration & Knowledge Management

- Leverage standard internal communications activities to make initial progress on knowledge management
- Use a consistent and structured shared storage solution to provide flexibility and prevent knowledge silos

Knowledge Management, Collaboration and Communications are three separate disciplines, but they are combined here given the common sets of technology tools and options available. Fundamentally, each discipline is about finding and connecting staff to the information and people needed to do their jobs.

Because these disciplines are so cross-departmental, it is often hard to identify business sponsorship and to make a value case for investment. Even simple steps to improve consistency in small organizations can make transition considerably easier and provide flexibility during crunch times.

Consider Knowledge Management (KM) when setting up internal communication systems. Often, organizations of all sizes underinvest in KM, but some elements can be addressed as part of typical internal communication activities – as an easy win and first step.

Systems Administrator Andrew Mutua points to Care’s Knowledge Share Platform Methodology as a great example of an approach to a communication IT strategy. An intranet is not just an IT initiative; it is an organizational initiative. He says it is important to engage all teammates in the development of the communication system, since all will eventually use and adopt it. Start small, and then incrementally add to it as team collaboration dynamics are uncovered. One approach is to first use it as a file sharing facility, and then with the direction of the team, mature the system to include additional features – like forums, online workspaces, etc.

Beyond the systems, there are a lot of cultural changes and all sorts of transitions that have to happen to
Communications, Collaboration & Knowledge Management

courage people to participate. In order for a new system to be used, there must be a concerted effort to promote and popularize the intranet, or there is a large risk that people will not adopt it and will revert to their old ways. Management should do regular communication over email pointing users to the new system, as well as complimenting those efforts with newsletter features, staff meetings or in-person events where people show-and-tell how to best use the new system.

“Setting up good communication and KM structures is crucial, but it isn’t enough,” says Simone Parrish, Global Repository Director for the Knowledge for Health Project at John Hopkins Center for Communication Programs. “Recognize that even the best system is useless if it isn’t used consistently. Work with your team to overcome adoption hurdles; find what combination of incentives, training, reminders, enforcement, feedback loops, and consequences work to get your team happily using a system.”

Use a consistent and structured shared storage solution to provide flexibility and prevent knowledge silos

It is important for organizational knowledge and files to be freely shared among teammates; having a shared online space to host documents is useful for both accessibility and archiving. A solution that provides a centralized location for operations, leadership and program managers to work off of for reporting and other tasks is key.

Adopt a consistent folder structure that is understood throughout the organization, so individuals can easily find documents. Set this at the beginning of a project, or re-evaluate existing folders to create a standard.
Communications, Collaboration & Knowledge Management

Tips for Creating a Winning Folder Structure

- **Space and underscores at the beginning of folder names will float them to the top of alphabetically sorted lists (e.g. _Projects).** Beware of this, unless intentional; users might expect to see the folder listed lower and may create a duplicate folder.
- **Avoid ambiguous and potentially redundant folders.** If you have a top level folder named “Pictures” and a top level folder named “Projects,” you may not want a copy photos from the field into both. Determine which folder you’d like to keep, or place one folder inside of the other (e.g. Pictures within Projects).
- **Create a template of empty sub-folders.** Establish a base set of folders to serve as a model for future folders. For example, each “project” may have a folder for “budget,” “proposals,” “presentations,” and “archive.”
- **Consider starting over.**
- **If your current folder structure is too disorganized, wipe the slate clean with a new, well-planned folder structure for your organization.** Move existing items to the correct place within this new structure, or choose a cutoff date when the old location becomes read-only and any changes must be copied to the new location.

Source: Digital Asset Management Best Practices and Inspiration: [http://www.damlearningcenter.com/resources/articles/5-tips-for-setting-up-an-organized-folder-structure/](http://www.damlearningcenter.com/resources/articles/5-tips-for-setting-up-an-organized-folder-structure/)

“Sit down and make it as simple as possible, and create your sub-folders within that simple structure, which gives you a clear path,” says Slobodanka Velickova, Head of GBI Operations at NetHope. “Even if you don’t know the activities, you can follow the path to get to a certain form or document or a report.”

Velickova says that her work consists mostly with contracting services for USAID projects, so there is a particular structure that maps well to USAID’s needs. Collaborate with admins and program managers to find a shared folder strategy that covers the needs for both, and can be applied to all of the organization’s projects.
Communications, Collaboration & Knowledge Management

Case study: CARE Somalia/South Sudan Knowledge-Sharing Platform

CARE Somalia/South Sudan long relied on shared folders and email as a way of sharing information and communicating which, over time, proved to be inadequate.

As a result of this, CARE Somalia/South Sudan faced the following challenges:

1. Lack of access of shared information to members of staff in sub/field office or road warriors (traveling staff)
2. Inadequate information flows between headquarters and the field operations
3. Inadequate data management processes

This is what led the country office to pursue the option of having an intranet (web-based portal) as a platform for knowledge sharing and communication. The below is the approach that CARE Somalia/South Sudan took in developing and deploying the intranet across the organization.

Source: CARE Knowledge Share Platform, Somalia/South Sudan Example
Creative Thinking for NGOs

Additional Best Practices

- Amplify the user’s voice and experience throughout
- Collaborate using a shared lexicon

Amplify the user’s voice and experience throughout

“I think that there is a need to be testing usability from the get-go; you’re sort of developing it with the pilot – is this product really effective? And is doing this pilot of back-office systems no different than what you’d be doing with front-of-the-house?” says Brian Taliesin, of PATH.

PATH created a methodology called the Collaborative requirement development methodology (CRDM) with the Public Health Informatics Institute (PHI). It works to raise the voice of users within the overall software development – with special attention to the actual processes they were trying to improve. The business process modeling is simplified and introduces rounds of field validation, executive buy-in and review to the overall process. The CRDM also outlines what process execution looks like and how that process itself is measured; from there, that information can inform system requirements as well as complimentary business rules.

Collaborate using a shared lexicon

Many projects and teams founder because different departments or groups have different meanings for common words. What is a project? What is a program? What is a commitment?

PATH created a low-effort tool that they internally call a data dictionary; it is loaded with different terms and terminology that helps their team think through how their systems should be connected. They also have begun to focus on how information flows in and out of their systems, not just within the process.

Jumpstart this shared lexicon by creating online documents via Google Docs or Wiki.
Mobilizing Community Resources

- Cash in on economies of scale, either by joining a consortium or participating in a shared service center
- See what resources have a concentration in the region, and then rally organizations to create a community of practice or reinvigorate an inactive one

As we all know, most NGOs operate in low-resource contexts. Capacity, infrastructure, human capital, money: these are all key things that perhaps are not available at the level that they would be in a different scenario. Resource pressures are typically felt more acutely in smaller organizations and so making the most of supporting networks can prove particularly valuable.

Cash in on economies of scale

Over time, shared service centers have emerged to help NGOs share best practices — either from other NGOs’ experiences or the private sector — and mobilize on economies of scale.

Andrew Mutua, of CARE, says that NGOs are uniquely positioned to collaborate with each other — sharing resources and best practices in variety of areas to advance a common goal.

“The unique thing with NGOs is that we don’t compete,” he says. “We can come together for the good of the people we are serving. It’s a good way to mobilize the resources that can then be utilized by many, just around that concept of economies of scale.”

Collaboration can come together as a consortium, agency or working group, and often that group creates its own community of practice to impact and influence a particular region.

See what resources have a concentration in the region

“The pay off will not be immediate,” Mutua says. “The pay off will come. The return on investment will come in a couple of years down the line.”
Mobilizing Community Resources

Leverage communities of practice as a mechanism for partnership and knowledge share. Networks or community of practices can act as mechanisms to better engage with (prospective) partners.

“What we’ve done more recently in my context in Nairobi for most of the NGOs that are headquartered here regionally (but they operate across east and central Africa) is come together around community of practice and see if you’re able to lobby a particular service provider or vendor to give something on a group-buying scheme, which would be heavily discounted as compared to going in as an individual organization,” says Mutua.

Some of these communities are consortiums – like the Inter Agency Working Group – that limit membership and require dues, but Mutua says that small organizations still may be able to work within them, particularly in an IT sub-group.

“The reason why we do this, beyond them being paid members, is that there is a lot of collaboration that happens and is of benefit to either of the participating orgs, so even as a big organization, I could take advantage of an innovation or an idea that has been advanced by a small organization,” he says.
Engaging Professional Advisory

- Build an organizational overview for technology, creating a roadmap for future investments
- Use resources to validate the advice you receive

As an organization scales and matures, there will be occasions when the experience offered by external advisory is worth the investment. There are an increasing number of opportunities to engage IT professionals in a pro-bono way. However, while the direct costs of pro-bono can be considerably lower, it is important to budget for time; stay very closely engaged throughout and validate their expertise, where possible. As such, any external advisory engagement requires careful consideration and may not be appropriate for some smaller organizations.

Advisory is often associated with high expense, so it is important to ensure costs are directed for maximum value; create a technology roadmap to complement the IT strategy.

If a process manual has been created for the organization (as described in Process Management Basics), there should be a reasonable idea of the majority of systems used across the organization. The next step is to translate this process-centric view into a technology-centric view — referred to as a Logical (or Conceptual) Architecture Diagram — and add in any missing systems or components to create a complete overview. The Appendix contains some do’s and don’ts as well as links to more in-depth guides, examples and a template for creating a Logical Architecture diagram.

Combining your IT strategy (as described in Architecting a Strategy) with this logical overview should enable the creation of a roadmap for future technology investments. The Appendix contains links to more resources to help prioritize plans and include the right level of detail. Considering the technologies known to the team should leave 1-2 highest priority areas where external advisory expertise can be considered. If this process of combining technology strategy, roadmap and capabilities is new, it is well worth seeking advice from someone who has done this before. If the recommended artifacts from this guide have been created, only a few days of support from a consultant may be required; this type of scoped, limited duration work can be particularly appropriate for a pro-bono engagement, as described below.
Engaging Professional Advisory

The CRS/NetHope Organizational Guide to ICT4D offers guidance on developing an Advisory Service internally; while the guide is aimed at supporting technologies for beneficiaries, it is equally applicable to developing capabilities that may be missing in the back-office. If the creation of an internal advisory service sounds like too much of a strain on a (small) team’s limited time and resources, then consider external advisory options as a reasonable approach in the interim, especially when they’re deployed against a prioritized roadmap.

Use resources to validate the advice you receive

It may be highly valuable to go the extra mile and validate any external advice received. Turn to colleagues responsible for respective functional areas for their input; consider referring to peers in similar organizations; or seek assistance from industry associations.

One of the great benefits of working in IT at an NGO is the wealth of peer resources and the spirit of collaboration among IT staff in the sector. Combined with standard IT resources such as networking organizations, topic conferences, extended vendor networking roundtables, meetups, and online forums there is a rich vein of deep experience available for free or at minimal cost.

NGO-specific resources include:

- NetHope (www.nethope.org);
- InsideNGO (www.insidengo.org);
- NTEN (www.nten.org);
- TAG (www.tagtech.org/); and
- CIO4Good.
Process Management Basics

- Recognize that process management applies across the departments and can help breakdown organizational silos
- Think of activities as a step in a larger process
- Take an inventory of your key data collection tools and forms
- Develop a process manual to identify opportunities to improve standardization and data integrity

Process management traditionally stands as pillar of business process management – which larger private sector organizations use to analyze business activities. Process management also helps to rethink how activities can be systematized to add value and organizational clarity. Performing a process-centric assessment can be valuable to any size of organization, but is typically of most value when there are more than just a few key user groups or the primary intervention of the organization is itself process-oriented – like in logistics or supply-chain management.

Recognize that process management applies across the departments

“The most common thing we see is that [NGOs] don’t think about [process management] period,” says Robert Worthington, director at Kwantu. “There would be an M&E silo that would approach this problem in terms of ‘what data do we need for the donors,’ and then there would a planning silo that would say ‘what data do we need for our own internal planning,’ and some cases those two would get together but very rarely would someone look at this holistically and think: ‘How would we understand this as a process in its own right that intersects with these other domains?’

“For us [at Kwantu], we would see [process management] as an area the overlaps with knowledge management, internal operations, with M&E,” he says. “We would primarily apply this in the context of program management and monitoring and evaluation. This could pretty much be applied to any NGO process – fundraising, for example, or human resources or finances.”
Process Management Basics

Kwantu usually introduces process management as process mapping, since it is often something new and different for those in the NGO and board-of-development sectors.

“We’ve found it useful to give [process mapping] a name so people can begin to engage with it,” Worthington says.

Think of activities as a step in a larger process

A health communications organization in Mozambique produced radio clips that were broadcasted on public radio. Instead of viewing each clip as a new activity, they needed to think of it as a process that fit into a larger strategic plan or operational plan (i.e. their team would produce 15 radio spots this year, with five of them focused in this region on this topic), or meet specific targets identified in a donor’s funding proposal. In the planning phase, notes help record and identify key elements of the activity, and that information can lead to a series of steps – depending on the organization’s preference; steps could include a scoping and drafting phase, an approval stage or a design input step. It is important for teams to take the time to sit and holistically think about an activity and how it, as a process, fits into other areas of work. With the creation of radio clips, the organization ended up with a knowledge product. The organization would want to keep this product in a repository, understand how it is being used and also use it to gain evaluation information: all things that tie into monitoring and evaluation, in terms of reporting back to donors and other stakeholders.
Process Management Basics

Take an inventory of your key data collection tools and forms

Once an organization defines all of its activities as processes, the next step is to look at what kind of data collection tools or forms are needed to collect information in relation to these processes. For example, there may be a simple planning form in order to register a new media product or there might be a cover sheet that a manager needs to sign off on at a certain stage of asset development; documents related to planning are entirely driven by the circumstances and priorities of the organization. Be sure to make note of all potential tools and forms, and see where certain tools can be leveraged across multiple processes, or activities.

“Of course, you may have an example of a social behavior change communication that may have three business processes – one around creation of media products, one around doing community-level behavior change, maybe you’re doing behavior workshops which would have a related process,” says Worthington. “Maybe you’re doing another set of activities, or some other kind of workshop, and of course each of those can intersect and share certain key data collection tools in common. So what we find is as organizations look at this more and more holistically, they see that they are sharing common data collection tools. For example, almost all organizations have some form of contacts directory or some sort of contact information that they need to collect in terms of stakeholders and they need to tie that into almost every process,” he says.

Review data types from planning stage and determine what kind of data collection tools or forms are needed to collect them.

Make a list of all potential tools and forms; star tools that can be leveraged across multiple processes or activities.

“Through this approach, an organization is trying to discover and unearth the underlying structures that they need to build a sort of data taxonomy for their organization - like PATH’s data dictionary - and then that of course can cut across a whole range of work.”

Robert Worthington, Director, Kwantu
Develop a process manual to identify opportunities to improve standardization and data integrity

With a full mapping of activities as processes and their related assets, an organization needs to create a process manual that defines all steps for each process as well as the roles and responsibilities of key people at each step along the way. Data collection tools should also be noted as part of a particular step.

“For instance, at step 5, this data collection tool should be used, at step 6, it’s this one, and so on,” says Worthington. “Indicators can now be derived from the data you are collecting by way of those data collection tools.”

The process manual documents all your organization’s processes, which now allows for integration across planning, knowledge management and monitor & evaluation.
Process Automation

Before considering ongoing improvements to operations and administration, be sure to have data capture set up to an organizational database (as covered in Policy & Procedure) and make sure there is a clear picture of day-to-day operational processes (as explained in the Process Management section).

**Assess activities before automating and only make incremental improvements**

Always start with the quick wins. Assess activities and prioritize automation of those that have commonalities, like: being highly manual or time consuming; critical to the successful completion of the process; have logical steps in the same (or already connected) application or system. Throughout this assessment, be conscious of smaller, incremental steps in operational improvement that may likely yield better results over the long term.

As with any IT implementation, but especially for operational changes, it is very hard to get it exactly right the first time. Several iterations may be needed to tweak the application interface and logic, so be sure to get feedback from end users early and often.

Be aware of the unusual (edge) cases, but keep the existing, manual process or create workarounds, such that you can automate the activities 80 percent of the time, leaving the remaining (more complex) 20 percent for the future.

**Incorporate feedback and training from the very start**

Set up regular checkpoints with one or two people from the affected team, as well as the regular project team members (including IT and business champions). The agenda should include a live demonstration of the changes in the application throughout development, and feedback from everyone should be encouraged, captured
Process Automation

and prioritized during the meeting itself. Schedule these meetings to occur at least monthly, preferably more frequently and in sync with development team’s sprints or iterations (every 2-4 weeks), if possible. These demos act as a first round of training, enabling business champions to be more empowered to lead further training with their team members themselves.

Enable a culture of accountability

It’s very important to instill and support a culture of accountability with champions. From the initial decision to capture certain data and automate specific activities, champions should be held accountable to using the system in the same way as their team members that they are appealing to. Apply that same universal expectation for all those in the organization - requiring that steps during testing to be marked complete and for issues to be reported with proof that it’s been tried in the system (e.g., with screenshots).

Establishing this culture within an organization will push champions to deliver and hopefully aid the transition to the newly automated and more efficient process.
Leadership: Roles & Responsibilities

Business process matrix, as part of PATH's Collaborative Requirements Development Methodology (CRDM)

PATH developed a business process matrix as part of their Collaborative Requirements Development Methodology (CRDM). PATH worked with informatics leaders, including the Public Health Informatics Institute, to adapt the CRDM for use in low and middle income countries. They used it across multiple health domains, but the first was supply chain systems. View the matrix here: http://www.path.org/publications/detail.php?id=1865.

For more information on the use of CRDM in information technology projects in the US, see http://www.phiicrdm.org/methodology.

Electing a champion

“[From] everything I’ve learned in business school, you need an executive sponsor, and then a lot of communication down to all the different stakeholders that you might affect … [that] is really relevant for tech adoption,” says Elaine Chang, of Taroworks.

Chang says she has seen Tarowork roll-outs fail because there wasn’t universal buy-in across management, which led to mixed messages and unclear direction.

There will be some system roll-outs that are less invasive, and often welcomed by teams if they remove burdens on infrastructure or relieve a particular organizational pressure point. But for other systems that are either viewed as too confusing to understand or “only an IT thing,” it is important to find an accountable champion.

Select someone who can talk to both IT and business – the non-IT side of the organization. The ideal candidate is most likely someone very interested in data and solutions so, with their leadership and communication, tech becomes more accessible for the entirety of the organization, and the buy-in an easier feat.

Governance

IT Governance Framework options, as identified by CIO Magazine

CoBIT: This framework, from the Information Systems Audit and Control Association (ISACA), is probably the most popular. Basically, it’s a set of guidelines and supporting toolset for IT governance that is accepted worldwide. It’s used by auditors and companies as a way to integrate technology to implement controls and meet specific business objectives. The latest version, released in May 2007, is CoBIT 4.1. CoBIT is well-suited to organizations focused on risk management and mitigation.
Appendix

**ITIL:** The Information Technology Infrastructure Library (ITIL) from the government of the United Kingdom runs a close second to CoBIT. It offers eight sets of management procedures in eight books: service delivery, service support, service management, ICT infrastructure management, software asset management, business perspective, security management and application management. ITIL is a good fit for organizations concerned about operations.

**COSO:** This model for evaluating internal controls is from the Committee of Sponsoring Organizations of the Treadway Commission. It includes guidelines on many functions, including human resource management, inbound and outbound logistics, external resources, information technology, risk, legal affairs, the enterprise, marketing and sales, operations, all financial functions, procurement and reporting. This is a more business-general framework that is less IT-specific than the others.

**CMMI:** The Capability Maturity Model Integration method, created by a group from government, industry and Carnegie-Mellon’s Software Engineering Institute, is a process-improvement approach that contains 22 process areas. It is divided into appraisal, evaluation and structure. CMMI is particularly well suited to organizations that need help with application development, life-cycle issues and improving the delivery of products throughout the life-cycle.


**IT Governance Hands-on: Using COBIT to Implement IT Governance**


**Smartsheet**

Smartsheet provides easy, scalable work management for businesses of all sizes: [https://www.smartsheet.com/it-ops-solutions/audit-compliance-security](https://www.smartsheet.com/it-ops-solutions/audit-compliance-security)

**Policy & Procedures**


**Architecting a Strategy**


**Nesta’s DIY Toolkit:** [http://diytoolkit.org/](http://diytoolkit.org/)

**Purchasing & Contracting**

**TechSoup:** [https://www.ideo.com/work/human-centered-design-toolkit/](https://www.ideo.com/work/human-centered-design-toolkit/)

**Catchafire:** [https://www.catchafire.org/](https://www.catchafire.org/)
Appendix

Taproot: https://www.taprootfoundation.org/


Infrastructure & the IT Foundation


Services

Office 365: Free to NGOS and contains many of the tools needed to run the office

SharePoint: Store data online

OneDrive: Implemented for all users so that they have local copies of files and can still work if the internet connection is offline

Citrix: Remote desktop technology to allow field teams to access specialist services such as accounting systems can also be hosted in data centers


Spiceworks Helpdesk: http://www.spiceworks.com/

Business Applications

Open Source Initiative: http://opensource.org/osd


The Software Package Data Exchange® (SPDX®) specification
A standard format for communicating the components, licenses and copyrights associated with a software package: https://spdx.org/

Requirements Gathering Templates: http://www.seilevel.com/business-analyst-resources/templates/

7 Tools to Gather Better Software Requirements: http://www.liquidplanner.com/blog/7-tools-to-gather-better-software-requirements/

Open Source Initiative: http://opensource.org/osd

Appendix

Project Management

At a minimum:
1) Form a steering committee (even if it’s a committee of one);
2) Perform a stakeholder analysis;
3) Design a communications plan – how will the identified stakeholders understand the status of the project;
4) Analyze and be honest about the project risks and how they will be managed;
5) Plan the steps, activities, milestones and decision points; and
6) Report regularly and clearly.

Security

Bad Behavior: http://bad-behavior.ioerror.us/about/

Monitoring & Evaluation

Reporting

Reporting can take many forms: from highly visual tools such as Tableau, to the stock-standard text-and-data processing functions offered by the Microsoft Office suite.

Make sure to consider your requirements. For example, creating a sophisticated project dashboard using CartoDB or a striking infographic using Piktochart isn’t much good if your donor maintains a text-based reporting system.

These are some of the key considerations when thinking about ICT tools for reporting:

a. Does the program data you are currently collecting warrant the usage of a sophisticated reporting system?
b. Will adding a new reporting tool to your program allow you to better explain the impact of your programming?
c. Would adding a new reporting system save your organization time or money by automating/regularizing processes that are currently performed on a manual or ad hoc basis?
d. Would better reporting improve your organization’s ability to communicate with stakeholders, i.e. funders and beneficiaries?

Data Collection

What are the core needs of your programming that data collection tools can meet? Some notable solutions recently displayed at ICT4D conferences include iFormBuilder, a cloud-based system allowing users to collect data on Android, iOS, feature phones or simply through SMS; SurveyCTO, used to build surveys in Excel, and designed for field settings with no (or limited) internet connectivity; and FirstMileGeo, a data collection tool that provides map and GIS exploration and dashboards. Many more solutions either exist, or are in development right now. The choice is wide, and getting wider every day.
Appendix

Key considerations:

a. Ensure that you are taking a “program first approach,” i.e., what does the country/project need? Keep in mind what will work based on the context and the setting in which you are working. In particular, connectivity and language requirements should be key considerations;
b. Data security needs to be taken seriously from the outset, including issues related to the transmission of data as part of large-scale survey efforts.
c. Digitally delivered surveys may be more costly to design and deploy than traditional paper-based tools. Further, don’t forget to consider the back-end infrastructure that will be needed to store and analyze the data once it has been collected; and
d. If data collection is expected to be repeated (e.g., at baseline, and then again at the end of a project) it should be expected that some technological solutions may have changed in the interim. This is particularly true with respect to mobile technology, given the average life of a development project exceeds that of many mobile devices.

Research

Tools such as STATA, SPSS and SAS have a substantial pedigree and are regularly used to allow for more comprehensive analysis of datasets.

Key considerations:

a. Tools for research are highly specialized. Whether using a Python script, SPSS or a slide rule and paper forms, your primary focus should be on usable and robust data;
b. Investing in staff that can operate complex research tools is as, or more important than, the tools themselves;
c. Don’t reinvent the wheel. In many ways the development industry has arrived fashionably late to the big data party. Accordingly, there are already existing research communities that are quite advanced in terms of data tools and analysis libraries. Learn from them; and
d. Don’t let research tools dictate programming. The development industry is not a social science experiment and should focus on those that the industry serves, not just the data.

Integrated M&E

One such solution, DevResults, is a platform that monitors everything from project-level data to aggregate indicators that monitor global-level progress. There are also simpler systems like Akvo FLOW that help track activities and data flows.

So what are the key questions we need to ask of our prospective integrated M&E system?

a. Can the tool manage the kind of data you work with, such as disaggregated indicators reported per grantee, per reporting period, per location?
   Can it store training logs or hospital records? Do you need the tool to do longitudinal tracking?;
b. Does the system require skills beyond those of the would-be users? Can these skills be reasonably attained?;
c. What resources are needed to set up, update, manage and get information from the system?; and
d. Is it necessary to go beyond measuring results at a project level? Do we want to aggregate results across the organization, across the world?

Reporting, Analysis & Business Intelligence

Appendix

Qlik: http://www.qlik.com/
Tableau for Non-profits: http://www.tableaufoundation.org/initiatives/tableau-non-profits

Examples of use of BI tools within the humanitarian sector include:

Sierra Leone: Education Establishments: https://public.tableau.com/profile/rebeldroid12#!/vizhome/SchoolsFIN/DashboardSchools
Internet and Radio Services in Guinea: https://public.tableau.com/profile/rebeldroid12#!/vizhome/RadioInternetVoiceFINAL/radiointernetdashboard
Fighting HIV: http://www.tableaufoundation.org/stories/path
Dashboards by the British Red Cross: https://github.com/SimonbJohnson

Fundraising & Constituent Relationship Management

Raiser’s Edge: https://www.blackbaud.com/fundraising-and-relationship-management/raisers-edge
Salesforce: http://www.salesforcefoundation.org/non-profit/fundraise/

Human Resources

Workday

International Relief Committee is deploying Workday [cloud-based financial and HR software]. Former CIO David Goodman says:

“The way I approach the cloud is it’s another option for delivering applications. I started by looking for the HR system that best meets our needs. I didn’t start by looking for something in the cloud. There are benefits to the cloud but, all things being equal, if an application is the best fit for our organization but I have to host it, I’ll host it. I have a robust infrastructure team and data centers. The other piece is that the cloud isn’t always available. As we looked at Workday, we were able to get comfortable with that. But if you’re an expat in a field location, and you have to do a performance review, you might have to do it offline.”
Appendix

Communications, Collaboration & Knowledge Management

Knowledge Share Platform Methodology

CARE Somalia/South Sudan has for long relied on Shared Folders and Email as a way of sharing information and communicating which, over time, proved to be inadequate.

As a result of this CARE Somalia/South Sudan faced the following challenges:
1. Lack of access of shared information to members of staff in sub/field office or road warriors (traveling staff);
2. Inadequate Information flows between headquarters and the field operations; and
3. Inadequate data management processes.

This is what led the Country Office to pursue the option of having an intranet (web-based portal) as a platform for Knowledge Sharing and Communication.

The following is the approach that CARE Somalia/South Sudan took in developing and finally deploying the Intranet across the organization.


Additional Best Practices

Collaborative Requirements Development Methodology (CRDM)

PATH worked with informatics leaders, including the Public Health Informatics Institute, to adapt the Collaborative Requirements Development Methodology (CRDM) for use in low and middle income countries. PATH has used it across multiple health domains, but the first was supply chain systems. You can see that document at http://www.path.org/publications/detail.php?i=1865.

For more information on the use of CRDM in information technology projects in the US, see http://www.phiicrdm.org/methodology.

Data dictionary

One example of a health data dictionary (HDD) can be found at http://openhdd.org/index.html. The HDD enables consistent, accurate, and systematic data collection and exchange. OpenHDD is an open-source tool for creating data dictionaries that has been used by the Joint Learning Network, allowing countries to coordinate best practices in data sharing between patients, payers, providers, and policymakers:
http://www.jointlearningnetwork.org/technical-initiatives/information-technology/resources.

Mobilizing Community Resources

InterAgency Working Group; regional consortiums: http://iawg.net/
Appendix

Engaging Professional Advisory

Build a technology roadmap

Logical/Conceptual Architecture Diagrams
• Do’s and Don’ts
  » Do include representations of your users where appropriate
  » Do keep it simple – include just enough detail to show the major technology choices and component responsibilities
  » Do be consistent with your levels of abstraction
  » Do use vertical (or horizontal) layers or tiers to help with the structure
  » Don’t include any physical hardware or deployment information
  » Don’t worry about using standard notation (e.g. UML), it’s more important that it’s easily understood by the target audience
• Guides
  » How is Software Architecture Created? http://www.bredemeyer.com/howto.htm
  » Simple Sketches for Diagramming your Software Architecture: http://www.methodsandtools.com/archive/softwarearchitecturesketches.php
• Examples
  » Techtribes.je’s Website Logical Containers Diagram: http://www.methodsandtools.com/archive/archisketches3.png
• Templates

Roadmaps
• Do’s and Don’ts
  » Do start with a format that allows you to quickly and easily iterate, e.g., pencil and paper or on a whiteboard
  » Ten Tips for Successful Technology Roadmapping
    * http://nexightgroup.com/ten-tips-for-successful-technology-roadmapping-part-1/
    * http://nexightgroup.com/ten-tips-for-successful-technology-roadmapping-part-2/
• Guides
  » Create a Technology Roadmap: http://www.entrepreneur.com/article/83000
  » Fundamentals of Technology Roadmapping: https://www.sopheon.com/fundamentals-technology-roadmapping/
• Examples
  » Visualizing Strategic and Technology Roadmaps: http://www.albrightstrategy.com/roadmap_examples.html
Validating the advice

There are a few key questions you can ask to validate the implementation advice you’re receiving, whether that’s from a paid external consultant or a pro-bono volunteer.

On application vendors
- Does the vendor make their application code available in an open source or community licensed capacity? [Avoid those that don’t];
- Does the application have a well-documented API and is it publically available? [Avoid those that don’t publish it clearly and comprehensively on their website]; and
- Are there any community or charity licensing options available? [A number of vendors make their software available for low or no cost through techsoup.org, or similar. Some vendors require you to host their software under these licenses, so be careful with these if you have no experience doing so.]

On custom application development
- If any open-source alternatives exist, why are they not appropriate? [Not using any open-source applications or component parts should be a concern as they exist for almost everything now]; and
- How will any open protocols and standards be used to future-proof your application? [There are a number of these that have gained significant support and while there’s no guarantee you will always pick the most appropriate, at least you’re in the running.]

Pro-bono directories and intermediaries
- Global
  » www.linkedinforgood.linkedin.com
- North America - Nationwide
  » www.taprootplus.org
  » www.allforgood.org
  » www.volunteermatch.org
  » www.idealist.org
  » www.catchafire.org
- North America - Regional
  » South: www.voly.org

Process Management

Process manual for running community scorecards

With a full mapping of activities as processes and their related assets, an organization needs create a process manual that defines all steps for each process as well as the roles and responsibilities of key people at each step along the way. Data collection tools should also be noted as part of a particular step.
Appendix

This process manual (http://solutionscenter.nethope.org/assets/collaterals/back-office-IT/CSC-Process-Manual-Guide.docx) breaks down community scorecards – a participatory method used in a program to help citizens monitor the quality of service delivery – into a series of stages and documents forms and taxonomies needed to collect data as part of the process.

Three core concepts of process management

This diagram and text helps explain the interplay between process, information and management. Instead of starting with indicators (a top-down approach), an operational approach to process management focuses on the specific activities being implemented by an organization (a bottom-up approach).

This approach starts by understanding activities in the context of the process followed to implement them. For example, when implementing a community scorecard or social audit, there are a series of different stages that the process goes through, each of which include activities specific to that stage (for example recruit and register groups to participate in the process).

This concept is intuitive to Chief Security Officers (CSOs) that are already implementing these activities. However, they may not have conceptualized the activities as a process divided into stages or have developed clear forms to collect data at each stage.

Taking an operational process to monitoring and evaluation enables us to consider three areas that are critical to ensuring that the data collected is relevant to the CSO as a whole.

**PROCESS** - The process circle relates to the processes, procedures, and minimum operational requirements that need to be in place. For example:

- The steps followed when implementing a social audit; and
- Review steps to check data quality or analyze data for learning and reflection.

**INFORMATION** - The information circle relates to data, and the tools needed to collect data. The information and process circles interact on a fundamental basis. It includes, for example:

- The data collection tool to record a new group of participants; and
- The data collection tool to collect reflections and analysis.

**MANAGEMENT** - The management circle ensures that the processes are in place and are being followed. At the same time it uses information to manage the processes, modify them and verify that they yield the required result. For example:

- Reviewing a weekly report that shows the status of each social audit process; and
- Reviewing a monthly report of challenges arising from the implementation.

Considering these three interrelated areas from the outset ensures that the monitoring and evaluation system is aligned with the priorities of the CSO, not just those of its donor.
Appendix

Further Reading

Understanding The Role of IT / ICT for Organizational Efficiency
Relief Agency CIO Gets Creative When Deploying Technology To Danger Zones

Cases On Information Technology And Business Process Reengineering

Governance
IT Governance – What Is It And Why Is It Important?
http://www.digitalistmag.com/innovation/it-governance-what-is-it-and-why-is-it-important-04961

IT Governance Definition And Solutions

Infrastructure & the IT Foundation
How To Deal With Internet Bandwidth Caps

Business Applications
Free And Open Source Software Compliance: The Basics You Must Know:
http://www.linuxfoundation.org/publications/compliance/compliance-the-basics-you-must-know

Issues To Consider When Using Open Source Software

Creating A Lean, Mean Requirements Machine
https://www.atlassian.com/agile/requirements/

Monitoring & Evaluation
Emerging Opportunities: Monitoring And Evaluation In A Tech-Enabled World
Appendix

5 Things You’re Doing Wrong In Your Monitoring And Evaluation Process  
https://blog.socialcops.com/resources/5-things-wrong-monitoring-and-evaluation-process

Team4Tech M&E Toolkit  
https://www.team4tech.org/sites/default/files/Team4Tech_ME%20Toolkit_Final_051415.pdf

Reporting, Analysis & Business Intelligence  
Business Intelligence For Non-profits  
http://teamheller.com/business-intelligence-nonprofits/

Choosing A BI tool  

The Top 9 Business Intelligence Blogs You Should Be Reading  

5 Ways To Get The Most From Your Business Intelligence Tools  
http://rmagazine.com/5-ways-to-get-the-most-from-your-business-intelligence-tools/

Human Resources  
A New Wave Of HR Technology Is Disrupting The Market  
http://www.entrepreneur.com/article/246459

Communications, Collaboration & Knowledge Management  
Making Sense Of Knowledge Management To People Who Matter In The Development Sector  