TRANSFORMING TECHNOLOGY PRO BONO

A PRACTICAL APPROACH TO ENGAGING TECHNOLOGY TALENT FOR NONPROFIT CAPACITY BUILDING

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Technology is driving change in every sector, yet not all sectors are benefitting equally from the efficiencies and transformation that technology can provide.

Today, every organization needs technology to succeed, regardless of sector. This has increased the demand for technology talent, with 18% growth predicted in tech employment versus 11% in other industries by 2022[1]. While integrating technology is central to *capacity building*, the *social sector* is severely behind[2] the for-profit sector in investing in and fully utilizing technology.

- For nonprofits, the median technology budget is < 2% of each organization's total operating budget.
- Only 66% of nonprofits report including technology in their strategic plans, and a large subset are not measuring the return on these investments.
- Nonprofits are not confident that they have enough skilled staff or training to effectively use technology.

Multiple challenges exist in *technology pro bono:* many nonprofits don't know how to utilize technical talent, some companies are unsure how to engage their employees, and many *pro bono consultants* are unclear how to translate their technical skills to the social sector.

We, the VMware Foundation and Taproot Foundation, believe that pro bono *technology talent* can bridge this growing divide.

Therefore, we partnered to explore how we can better address social *sector needs* with pro bono technical talent. VMware, a global leader in cloud infrastructure and business mobility, has a global community of diverse and highly skilled technical talent who are passionate about *Service Learning.*

Taproot, a leader in connecting social change organizations with skilled volunteers, has helped to define, build, and advance the field of *pro bono service* around the globe. This resource serves to advance the conversation about and direction of technology pro bono.

Specifically, this research paper:

1. Introduces two concepts that can break down some of the common barriers to successful technology pro bono engagements.

2. Presents a framework and an assessment tool, drawn from best practices in the technology industry, that can help nonprofits build capacity with pro bono technology talent.

3. Proposes next steps for nonprofits, pro bono consultants, companies, and *donors.*

Our goal is that all *social sector stakeholders*, from nonprofits, to pro bono consultants, to companies, to donors, find this guide both inspirational and useful.

Taproot Foundation
taprootfoundation.org

VMware Foundation
vmware.com/company/foundation

Throughout this paper, "We" collectively refers to the VMware Foundation and Taproot Foundation.

Italicized terminology is defined on page 29 under Defining Terms

A CUSTOMER-CENTRIC APPROACH TO TECHNOLOGY PRO BONO

It can be complicated to determine how technical talent can best serve nonprofit needs.

We started with interviews and focus groups with VMware employees worldwide, asking, "What does tech talent mean? What do these people actually do? And how can or can't their skills be used by nonprofits?"

Throughout this inquiry, two key themes emerged:

1. **Start from customer needs:** Finding the best *solution* is about putting yourself in the customer's shoes.
2. **Apply established best practices:** Honing in on the similarities between the social and for-profit sectors makes many for-profit best practices easily translatable.

"

The most important thing is what are the customer challenges and how can technology help them.

– VMware Senior IT Director

1. START FROM CUSTOMER NEEDS

For VMware, solving challenges means starting with the human and business context and then identifying a solution. VMware takes a customer-centric approach to create technology that addresses customer needs. Sounds fairly reasonable, right? But it's the exact opposite of how many stakeholders approach technology pro bono in the social sector.

Nonprofits are usually asked, "What technology challenges do you face? What technology can solve your problems?" This narrows the conversation to a specific technology application (think: websites, CRM, or databases). Instead, what if we asked, "What is stopping you today? What do you need to grow? What would you do with unlimited resources?" By uncovering these types of *organizational challenges and opportunities*, we begin to see how technology can transform a nonprofit.

Similarly, stakeholders may start the technology pro bono conversation by asking, "What technology expertise is available?" Taproot has been asked many times by well-intentioned companies to engage a specific group of talent (e.g. developer, product manager, or designer), which can result in projects that don't necessarily meet the most critical needs of the nonprofit.

Starting from customer needs means moving away from "technology challenges" and "technology talent" and moving towards addressing the customer's organizational opportunities.

> **How does starting with customer needs break down common technology pro bono barriers?**
>
> **Nonprofits, pro bono consultants, and companies can get out of the "technology talent" weeds.**
> This shift moves away from thinking of technology talent as highly specific and solely reserved for engineers and developers. It opens up new possibilities to engage a more diverse talent pool and identify the best fit for the organization's needs.
>
> **Nonprofits can focus on transformational opportunities rather than technology titles.**
> Rapid advances in the technology industry cause titles and roles to change constantly. Position titles often differ between companies and don't always represent individuals' capabilities. Taking the onus off of a nonprofit to understand this ever-changing landscape frees it up to focus on its organizational opportunities.

By approaching the nonprofit as a customer and starting with its needs, pro bono technology talent can more readily apply established best practices to better serve the nonprofit.

2. APPLY ESTABLISHED BEST PRACTICES

Too often, stakeholders focus on the differences between the social and for-profit sectors. In fact, Taproot expected VMware employees to emphasize the differences in the social sector and to question the application of their professional skills to nonprofits. Instead, VMware employees were quick to focus on the similarities.

Whether discussing for-profit or nonprofit customers, VMware employees recognized that every organization shares common constraints: budget, resources, staffing, and time. Serving the customer means understanding their limitations upfront in order to design solutions that best address their needs.

By taking a customer-centric approach, it's possible to leverage established best practices regardless of sector.

> **How does following established best practices break down common technology pro bono barriers?**
>
> **Nonprofits and pro bono consultants can better focus limited resources.** Instead of investing energy in creating new processes, pro bono technology talent can be more efficient and effective when they draw from proven practices.
>
> **Pro bono consultants can more readily translate their skills to nonprofit partners.** By applying familiar tools in new territory, pro bono technology talent can make more meaningful contributions to a nonprofit.

By honing in on the similarities between the sectors, companies and technology talent can better leverage their strengths to build nonprofit capacity.

> **Case Study:** See how pro bono technology consultants partnered with a nonprofit to transform the delivery of medical care: www.vmw.re/surgicorps.

SOLUTION DEVELOPMENT FRAMEWORK

The Solution Development Framework is a comprehensive approach that nonprofits and technology pro bono consultants can apply to co-create sustainable solutions that solve a nonprofit's needs.

Why use the Solution Development Framework?

The Solution Development Framework was inspired by the Systems Development Life Cycle (SDLC) – an approach used in the technology sector to solve business problems. The SDLC is a process that aims to produce high-quality systems that meet or exceed customer expectations by planning, creating, testing, and deploying an information system.

For many technology professionals and companies, this framework isn't new. However, traditionally in technology pro bono engagements, key phases of the full life cycle are often skipped, and the bulk of technology pro bono projects fall into the Implement phase (think: hackathons or weekends of coding). Applying the complete framework leads to more impactful projects over time.

Benefits of the Solution Development Framework include:

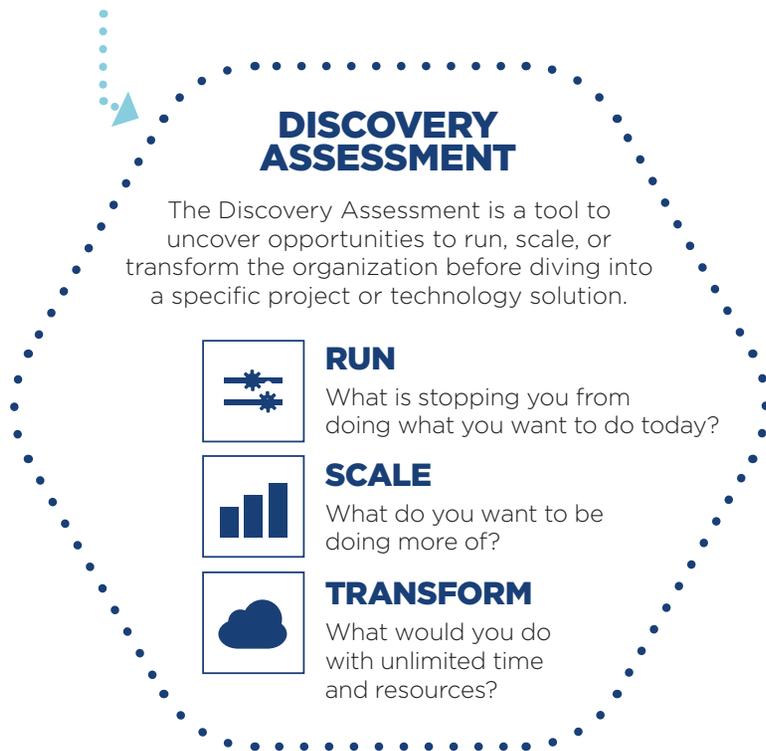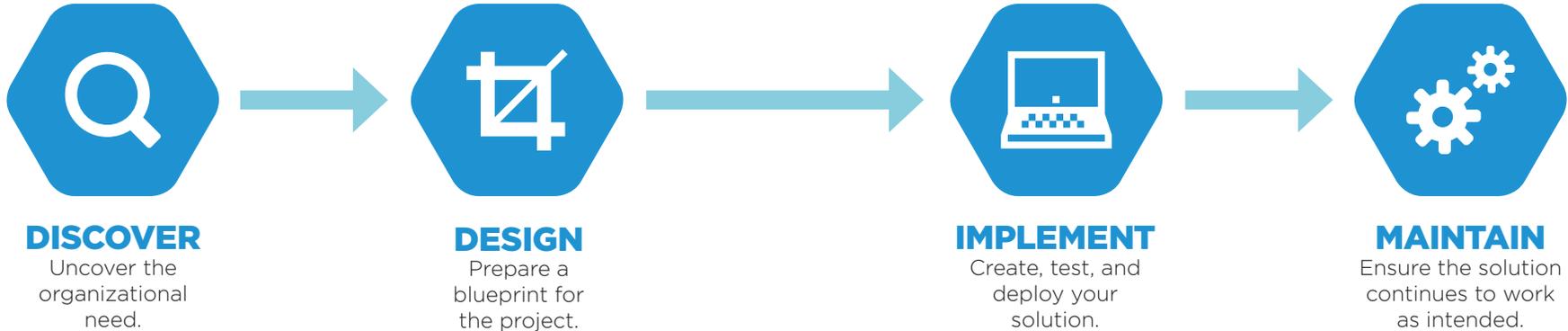| **Take a more strategic approach.** Better understanding the organization's needs in each phase helps identify the right talent to engage.	**Align with tested industry standards.** Adopting a more comprehensive approach to address organizational needs creates a higher likelihood of successful outcomes.

> **A nonprofit is a customer trying to build solutions.**
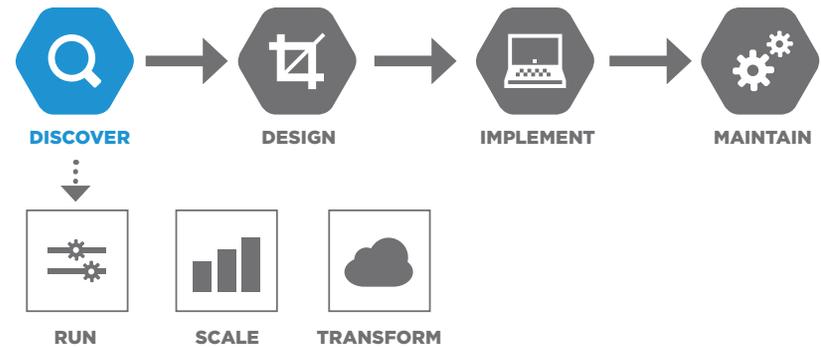>
> – VMware Solutions Delivery Manager

SOLUTION DEVELOPMENT FRAMEWORK

The Solution Development Framework is a process-driven approach to discover, design, implement, and maintain sustainable solutions to meet an organization's needs.

DISCOVER
Uncover the organizational need.

DESIGN
Prepare a blueprint for the project.

IMPLEMENT
Create, test, and deploy your solution.

MAINTAIN
Ensure the solution continues to work as intended.

DISCOVERY ASSESSMENT

The Discovery Assessment is a tool to uncover opportunities to run, scale, or transform the organization before diving into a specific project or technology solution.

RUN
What is stopping you from doing what you want to do today?

SCALE
What do you want to be doing more of?

TRANSFORM
What would you do with unlimited time and resources?

DISCOVER → **DESIGN** → **IMPLEMENT** → **MAINTAIN**

RUN   **SCALE**   **TRANSFORM**

DISCOVER

Uncover the organizational need.

❓ Why is this phase important?

- This is a critical and commonly skipped phase. Investing in the Discover phase saves time farther along in the process and ensures more sustainable solutions that are integrated into existing systems.

- Given the importance of the Discover phase, we've developed the Discovery Assessment to help nonprofits and pro bono consultants uncover and prioritize possible pro bono projects.

🗂 What happens in this phase?

- **Explore organizational opportunities using the Discovery Assessment on pages 14-17.**

- Identify and prioritize possible projects.

- Identify any organizational risks, assumptions, and constraints that may affect a solution (e.g. budget, resources, and personnel).

- Analyze current systems or processes that may affect the solution.

- Document the needs and requirements.

👤 Who are the pro bono consultants to engage?

- People who translate organizational needs to the technical experts who design and implement the solution. Look for people who can:

  – Gather and analyze data from customers and stakeholders.
  – Understand how systems can solve routine business problems.
  – Identify opportunities for process improvement.
  – Define the scope, objective, and preliminary requirements for potential solutions.

- People who will be most successful in this phase will be able to:

  – Build trust and confidence with key stakeholders.
  – Understand how to influence a discussion to reach a productive resolution.
  – Navigate multiple perspectives to identify a path forward.

- People in these roles can sometimes be called: Business Analysts or Business Systems Analysts, Systems Engineers, Account Executives, or Pre-Sales Engineers.

DISCOVER → DESIGN → IMPLEMENT → MAINTAIN

RUN   SCALE   TRANSFORM

DISCOVERY ASSESSMENT

Identify organizational opportunities to Run, Scale, and Transform

The Discovery Assessment is a tool to kick off the Discover phase of the Solution Development Framework. We know that many nonprofits face a myriad of challenges across their organizations. This assessment can help nonprofits and pro bono consultants hone in on critical nonprofit needs.
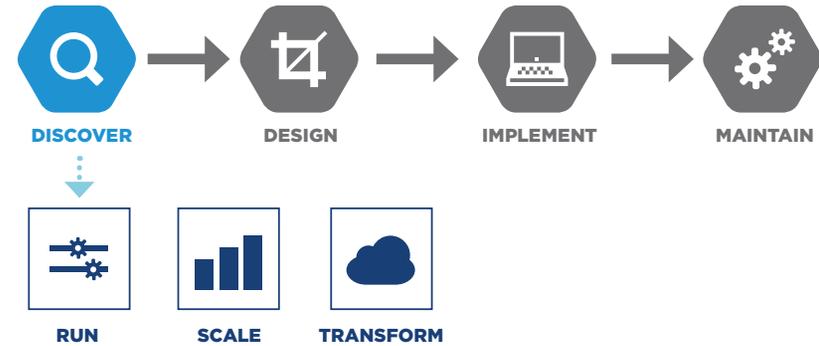
Why use the Discovery Assessment?

Address today's challenges. Identify immediate areas of need that are keeping an organization from getting work done today.

Plan for tomorrow's solutions. Focus on building proactive solutions for the long run while still addressing current needs.

If you're a:

- **nonprofit:** Review the prompt questions under each category to evaluate your existing needs and opportunities.
- **technology pro bono consultant:** Review this assessment with the nonprofit to determine its needs or opportunities in each category and how you can best add value.
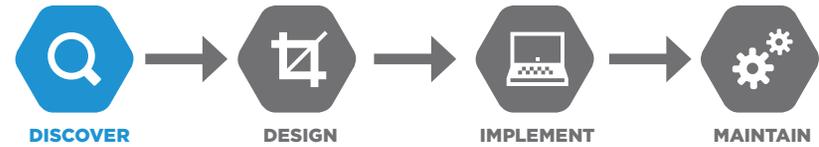
> **You ask the customer: 'How are you doing things now? Who is doing things? What do you want to be doing and how can we craft a plan to get there?'**
>
> – VMware Lead Business Systems Analyst

DISCOVERY ASSESSMENT

RUN

Run refers to the daily needs of your organization. It includes any necessary fixes to keep programs and services running.

What is stopping you from doing what you want to do today?

- What do your day-to-day activities look like?
- Describe the tools and processes you use to complete your daily activities.
- What isn't working as expected?
- Do you have new, legacy, or outdated systems? How do they interact?
- Do you have staff who can address issues as they arise?

SCALE

Scale refers to how your organization can grow the reach of its operations and programs. It includes the use or expansion of existing systems.

What do you want to be doing more of?

- Are there annoyances about your processes today that could benefit from being changed?
- Are there repetitive activities that consume large portions of staff members' time?
- Do your people need new skills to be more effective in their roles?
- Are any of your goals being hampered by limited resources?
- Describe areas where you want to increase your reach or impact.
- Are your processes getting stuck in multiple hand-offs or waiting for responses/approvals?

TRANSFORM

Transform refers to evolving your organization. It includes fundamental changes in the way operations and programs are managed.

What would you do with unlimited time and resources?

- How might you more effectively and efficiently meet your constituents' needs?
- How might you better engage with your stakeholders?
- Describe what success looks like for your organization in five years.
- If you could have three wishes about your organization's operations and programs, what would they be?
- Describe an organization you admire. What are they doing that you aren't?
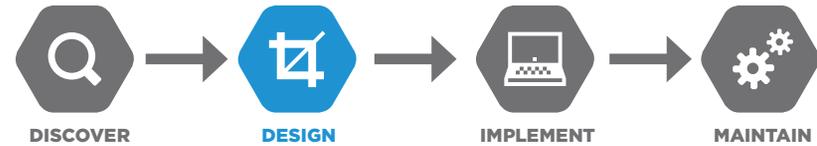
DESIGN

Prepare a blueprint for the project.
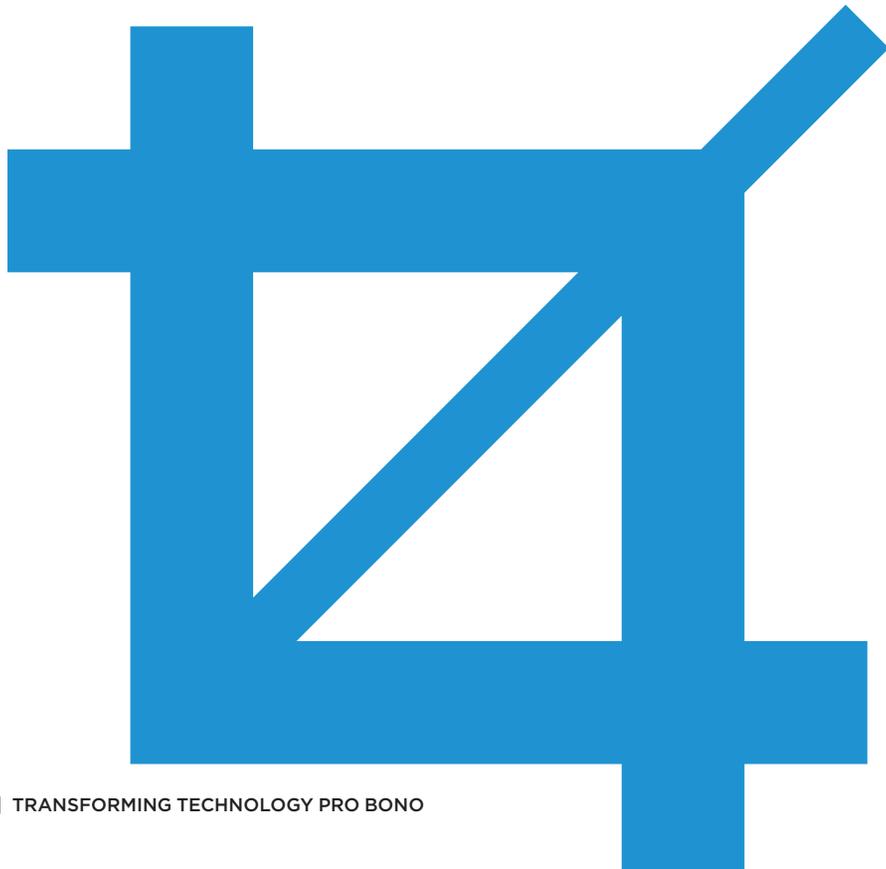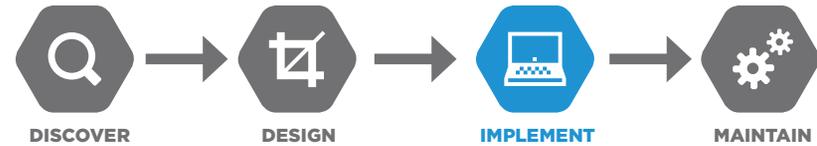
? Why is this phase important?
- Create a solution that meets the requirements gathered in the Discover phase. All subsequent phases are impacted by the design.

What happens in this phase?
- Define desired features and how the solution will look.
- Determine how the solution will interact with other existing systems.
- Continue to validate the need for and direction of the proposed solution.
- Assess risks, assumptions, and constraints.
- Document the solution design.

Who are the pro bono consultants to engage?
- Look for people who can:
  - Create designs or use cases for solutions.
  - Understand existing and new systems.
  - Advise on whether to buy or build a solution.
  - Provide analysis on possible options and recommend best-suited solutions.

- People in these roles can sometimes be called: Solutions Architects or Systems Architects.

DISCOVER → DESIGN → **IMPLEMENT** → MAINTAIN

IMPLEMENT

Create, test, and deploy your solution.
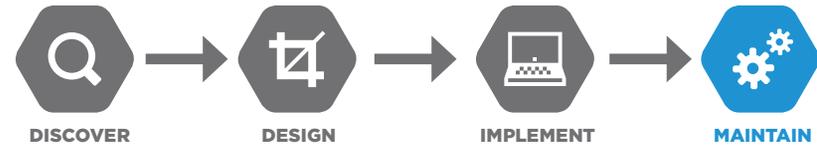
? Why is this phase important?

- Turn the design into reality and officially launch your solution. This is also the phase in which the knowledge transfer happens. Any documentation, plans, requirements, guidelines, and information about the solution should be passed on to the nonprofit owner.
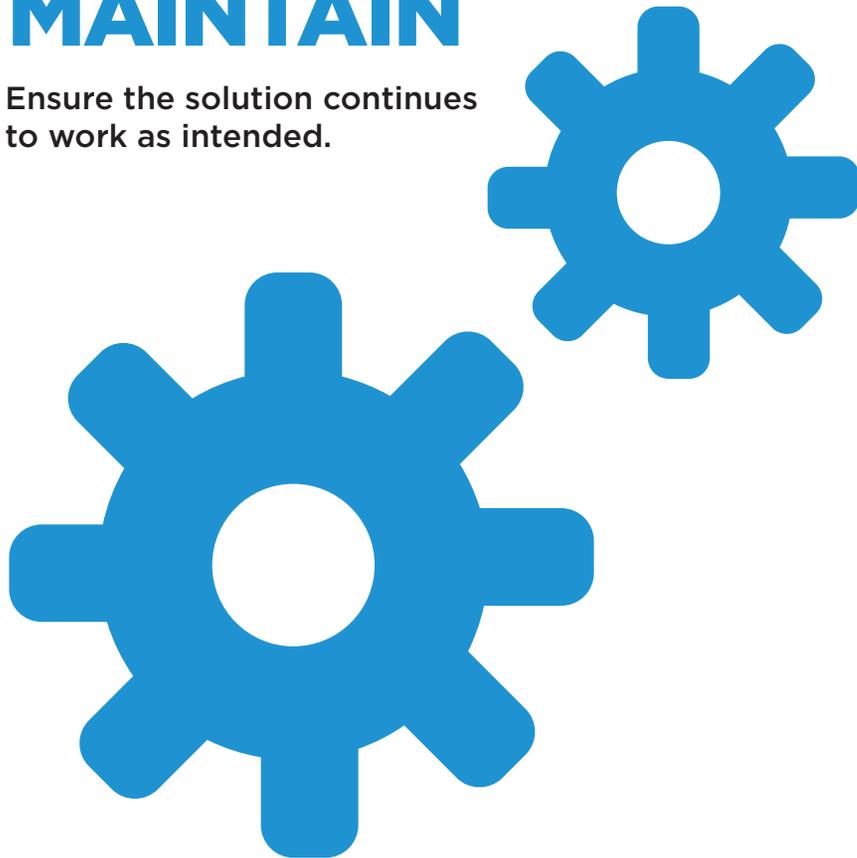
What happens in this phase?

- Build a new solution or adopt one already on the market. Most nonprofits will adopt an existing solution.

- Continue to validate the need for and direction of the proposed solution.

- Test the solution to ensure it is operating correctly and has the intended outcomes.

- Document all new systems and processes.

- Train staff members and stakeholders on how to use the solution.

- Identify a roll-out and adoption plan as part of the solution launch.

Who are the pro bono consultants to engage?

- Look for people who can:
    - Document and transfer all knowledge of existing and new systems.
    - Roll out a new solution.
    - Perform unit tests on the solutions to ensure application works correctly.
    - Create and deliver trainings to end users.
    - Develop or write the code for the technology solution, as needed.

- People in these roles can sometimes be called: Developers, Engineers, or Architects.

MAINTAIN

Ensure the solution continues to work as intended.

? Why is this phase important?

- Revisit whether the solution is still meeting evolving needs and determine if there are any opportunities to upgrade.

What happens in this phase?

- Continue to validate the need for and direction of the solution.
- Evaluate whether the solution is continuing to meet the need.
- Address fixes or bugs that arise.
- If the solution is not working as intended, revisit the Design phase.
- Ask whether there are new organizational needs that may require different solutions. This is a great time to determine whether to begin a new Discover phase.

Who are the pro bono consultants to engage?

- Look for people who can:
  - Analyze, test, troubleshoot, and resolve solution issues.
  - Interface with various users to resolve any solution problems.
  - Revisit project requirements and ensure that goals are being met.
  - Consult with users to identify potential solution enhancements.

- People in these roles can sometimes be called: Consultants; Solutions Architects; Support Services; or members of Testing, Performance Evaluation, or Quality Assurance teams.

PUTTING IT ALL IN ACTION

Transforming technology pro bono will require coordinated and conscious action from all stakeholders: nonprofits, pro bono technology talent, companies, and donors. We've outlined steps each stakeholder group can take to adopt this new approach and integrate the Solution Development Framework.

COMPANIES

Find ways to connect nonprofits with your technology talent. Use the Solution Development Framework and Discovery Assessment to uncover opportunities that bring nonprofits and your technology talent together and more effectively tackle pro bono projects.

Be honest and realistic about the level of commitment. Providing nonprofits with impactful technology pro bono support requires commitment and expertise. Use the Solution Development Framework to help you identify which employees may be most useful; then be realistic about their competing priorities in any given quarter. Build those expectations into your planning with the nonprofit.

DONORS

Support all phases of the Solution Development Framework. Understandably, you want to see the measurable impact of your investment. By supporting this comprehensive approach, you're building core capacity by helping the nonprofit build for the long-run while managing day-to-day needs.

Invest in the Discovery Assessment. Funding the implementation of a solution is highly valuable, if it's the solution the nonprofit actually needs. By supporting the Discovery Assessment, you're helping the nonprofit identify a solution that truly meets its needs, saving resources and expenses down the line.

NONPROFITS

Utilize pro bono early in the process. Partner with a pro bono consultant early on, and use the Discovery Assessment to uncover and prioritize your organizational needs. **How do you find that kind of consultant? Check out the job description on page 28.**

Make the case to donors. The Solution Development Framework is a resource to develop your strategic plan for technology. While donors more commonly fund the Implement phase of projects, having this type of organizational technology plan should be showcased to donors. Present this strategic capacity building ask as a multi-phase investment or make a targeted request for the Discover phase.

Be selective about the talent you engage. Being honest with interested volunteers will help you find the right volunteers, as well as save you energy and time. It's hard to say no to enthusiastic volunteers, so use the Solution Development Framework to let volunteers know the exact help you need in each phase.

Identify a point person. It's key to dedicate part (or all) of a staff member's time to provide overall project management and continuity. This may be someone who is involved in your organization's operations and strategic planning.

PRO BONO CONSULTANTS

Determine whether your skills fit the particular need. Ask a nonprofit where they are in the Solution Development Framework to identify their current needs. [If the nonprofit doesn't have a Solution Development Framework yet, the Discovery Assessment on pages 14-17 is a great place to begin.] Ensuring your skillset matches what they need at that time will create a more impactful solution for the nonprofit and meaningful experience for you.

Be honest and realistic about your level of commitment. Taking on a technology pro bono project with a nonprofit requires a high level of engagement over a period of time. If your schedule is full, or if you simply don't have the appetite for a long-term commitment, don't take on the project. There may be other short-term, consultative ways you can help nonprofits.

CONCLUSION

Integrating technology is central to nonprofit capacity building. Without investing in and fully utilizing technology, the social sector will continue to fall behind the for-profit sector. While capacity building has traditionally been under-resourced for nonprofits, technology pro bono can help bridge this growing divide.

In this paper, we introduced a practical approach to engage technology talent for nonprofit capacity building.

1. Take a customer-centric view: Understand the needs of the nonprofit and apply tested frameworks and tools.

2. Use The Solutions Development Framework: Discover, design, implement and maintain sustainable solutions that meet the organization's needs. Use The Discovery Assessment on pages 14-17 to help pinpoint organizational needs and opportunities.

3. Test and integrate the approach: Put it all into action with suggested next steps for nonprofits, pro bono consultants, companies and donors.

Nonprofits take on some of our globe's most challenging and complex issues. It's important for all social sector stakeholders to consider how we can better serve these organizations, address their needs, and support them in achieving their missions. Transforming technology pro bono means partnering with nonprofits to co-create long-term sustainability and impact through the use of technical talent. By working together, we can advance the direction of technology pro bono and ultimately bridge the growing technology divide.

RESOURCES

PRO BONO TECHNOLOGY CONSULTANT JOB DESCRIPTION

Are you a nonprofit looking to engage a pro bono technology consultant to kick off the Discover phase? Use this job description to craft a clear ask and find your ideal consultant on Taproot+ [http://bit.ly/TaprootPlus]!

Seeking Pro Bono Technology Consultant

Help us identify where and how a technology solution(s) can alleviate core organizational challenges and amplify our existing programs.

We are looking for someone who can:
- Work with subject matter experts and various internal stakeholders to understand business objectives.
- Gather, organize, and document technology requirements.
- Develop and implement scalable, flexible solutions that are responsive to our current and future organizational needs or guide us towards other resources to develop and implement solutions.

Who has experience in:
- Translating customer needs into new products, services, or solutions.
- Problem solving and engaging diverse teams to support the development of a product or technology strategy.
- Listening to a customer, understanding organizational needs, and developing relationships with stakeholders.

And who is:
- Curious, patient, open-minded, and passionate.
- Willing to take on gnarly challenges that can have long-lasting positive ripple effects in our communities.

DEFINING TERMS

- **Capacity building** is an investment in systems, processes, and technology that increases an organization's effectiveness in achieving its mission.
- **Donors** includes philanthropic partners, funders, foundations, and individual donors.
- **Organizational/Sector Needs** are the required people, systems, and resources to sustain operations and programs.
- **Organizational/Sector Challenges and Opportunities** are unmet needs.
- **Pro bono consultant/talent** refers to an individual volunteer/group of volunteers.
- **Pro bono service** is the contribution of one's professional expertise to nonprofits free of charge.
- **Technology talent** are professionals with technical expertise.

- **Service Learning** is contributing time and talent in service of a nonprofit and learning through that experience.
- **Social sector** includes nonprofit and third sector organizations.
- **Social sector stakeholder** includes nonprofits, pro bono talent, companies, and donors.
- **Solution** is the means to address an organization's need. Technology solutions can be hardware, software or systems.
- **Technology pro bono** is the contribution of one's professional technical expertise to nonprofits free of charge.

For a digital copy of this research paper, please visit: http://bit.ly/TransformingTechProBono

The VMware Foundation will continue to develop and share resources around technology pro bono and capacity building on: www.vmware.com/go/techprobono

THANK YOU

We would like to thank the people who graciously contributed their insights and time for this research.

[1]*Henderson, Richard. "Industry Employment and Output Projections to 2022." Monthly Labor Review (December 2013): Web. <https://www.bls.gov/opub/mlr/2013/article/industry-employment-and-output-projections-to-2022.htm>.*

[2]*Ward, Amy Sample. "The 9th Annual Nonprofit Technology Staffing & Investments Report." NTEN: Nonprofit Technology Network. N.p., 28 Apr. 2015. Web. 06 Apr. 2017.*

ABOUT US

Since 2001, Taproot has engaged over 16,900 volunteers in $161 million worth of pro bono services to nonprofits in need through its award-winning Service Grant program. Leveraging the knowledge and best practices established through this work, Taproot's Advisory Services practice now works with leading companies to build high-impact, customized pro bono programs. To date Taproot has worked with over 60 Fortune 500 companies and other organizations on pro bono service initiatives. For more information visit www.taprootfoundation.org.

The VMware Foundation exists to provide a platform to amplify the contributions of VMware people to their causes of choice, contributing to VMware's collective impact in the world. Knowing that we learn best by doing, at the heart of VMware's approach to giving is Service Learning. By integrating reflection with meaningful community service, Service Learning helps enrich the volunteer experience, encourages a learning mindset, and builds a culture of service that extends beyond our "day jobs" to lifelong civic engagement. VMware was recognized by Great Place to Work and Fortune as one of the 2017 Best Workplaces for Giving Back, and in 2016, 85% of VMware people gave back to the global community.