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## Solar **Survival** Guide // Challenge One

# Streamlining the Solar Back Office





**THE OFFICE?  
BUT I'VE GOT  
MY EYES ON  
THE ROOF!**

When it comes to **survival**, you have to look for improvements **everywhere.**

Solar installers usually focus on the roof, but success really starts in the back office where you prepare for all the challenges that lie ahead.

Before you ever send a crew to a job, you have to find customers, manage the books, hire staff, keep an eye on cash flow.... And for every deal you ink, you have to choose equipment, design the system, get the permit, and much, much more—all in a landscape of ever-changing policies and evolving technology.

Bottom line: you run a complex business, but that shouldn't get in the way of installing solar. Whether you're a small shop or a large installer with divisions managing the various tasks, you need to ensure the business of solar doesn't cost so much that it risks your very survival.

Streamlining the back office means doing the right things and doing them well. A streamlined back office connects the sales process with customer desires and the realities of construction planning. No matter your size or growth plans, an efficient and effective back office will help deliver at a lower cost and higher quality.

# HOW CAN I TELL WHAT'S BROKEN, AND WHAT'S WORKING WELL?

## FIRST LET'S LOOK AT HOW TO DISCOVER WHAT'S NOT WORKING

It's tempting to start with solutions. Companies try to sell them to you every day, from simple contact databases to enterprise-level cloud software suites, from line-item quotation notepads to computer-aided design tools. These solutions aim to improve three main focus areas in your back office.

- 1 Customer relationship management
- 2 System design and quotation
- 3 Permit preparation and submission

But before we look at solutions that can streamline those functions, let's introduce an approach and toolset that will show you where you're going:

**WELCOME TO PROCESS MANAGEMENT AND VALUE STEAM MAPPING.**

LINGO CHECK

### PROCESS MANAGEMENT

Part art, part science, process management encompasses the activities that both plan and monitor HOW work is done... the processes that underlie the work.



## CUSTOMER

Everyone who receives the work that we do is a customer: both system owners, and “internal customers” in our companies who sell, design and install systems. What do all these customers value? Projects (or tasks) completed on time, on budget, and with no defects.



A key tool in process management is the value stream map. It lets you visualize activities that don't add value for the customer. These are opportunities for streamlining.

Value stream mapping is a whole-system planning tool that takes into account not only the major steps to delivering a solar project but also the decision-making and information systems that support the process. It is often used to reduce cycle time, the time to complete a task from start to finish.

# INTRODUCING THE VALUE STREAM MAP//

# THE COMPASS FOR YOUR BUSINESS

# VALUE STREAM MAPPING IN FOUR STEPS

## STEP 1

Draw out current steps in your work process, including delays and decision flows, required to deliver a project.

## STEP 3

Draw optimized value stream map.

## STEP 2

Assess how to improve project throughput by eliminating waste.

## STEP 4

Develop concrete plans to work toward optimal process.



### A WORD OF WARNING...

Be sure that cost cutting in one part of the process, such as system design or installation, does not increase costs in another. Lowering soft costs is crucial, but do it strategically while considering the entire project fulfillment.

### ... AND A HIDDEN BENEFIT

Focusing on providing an excellent customer experience empowers installers to get out of the race to the bottom on pricing.

# ANY SHORTCUTS IF I DON'T HAVE TIME?

## Measure results and reward good ideas

Not all companies have the time to really map out their workflow, so a quick and dirty version involves two things:

### Measuring results

Creating a good set of metrics, or KPIs, is key to making sure your team—in the office and the field—is performing well. Aligning compensation with these measures adds incentive to improve. But be careful to measure the results you want: Poorly designed measurement can reward the wrong behavior.

### Rewarding ideas

No one knows the day-to-day work as well as the people performing it. Ask employees for suggestions, implement good ideas, and reward all who help you reach the goal of aligning people, tools and processes.

**AND REMEMBER, CONTINUOUS IMPROVEMENT IS THE NAME OF THE GAME.**

LINGO  
CHECK

### KEY PERFORMANCE INDICATOR (KPI)

KPIs measure progress towards a goal. If you're measuring success the wrong way with goals that don't support the creation of customer value, it's easy to be fooled by your own numbers. Choose KPIs that measure effectiveness, not just efficiency.

## FOCUS AREA

# CUSTOMER RELATIONSHIP MANAGEMENT



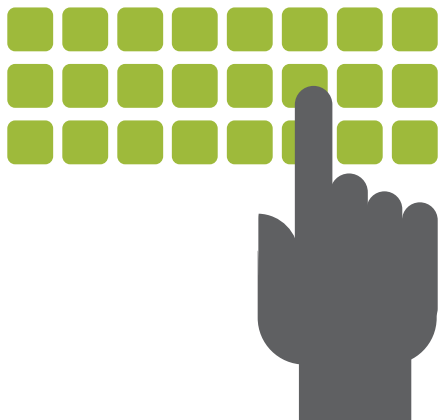
## Because everything starts with the customer

In growth markets around the world, installers are turning to advanced software solutions and other measures to help manage increasing project volume while maintaining customer excellence and competitive pricing. These include solar-specific customer relationship management (CRM) and business management tools to suit contractors' market-specific needs.

## THE GOAL: ONE-TIME ENTRY

Every company has a different comfort level with IT systems. Project volume usually dictates how much value is added through back office automation systems. But in all cases, customer value must flow unbroken through the entire system. This means customer data—including system design and other project details—ideally should be recorded once and added to as you go.

If your team is writing out customer contact information by hand or copying handwritten data into digital forms, you have non-value-added activities to be eliminated.



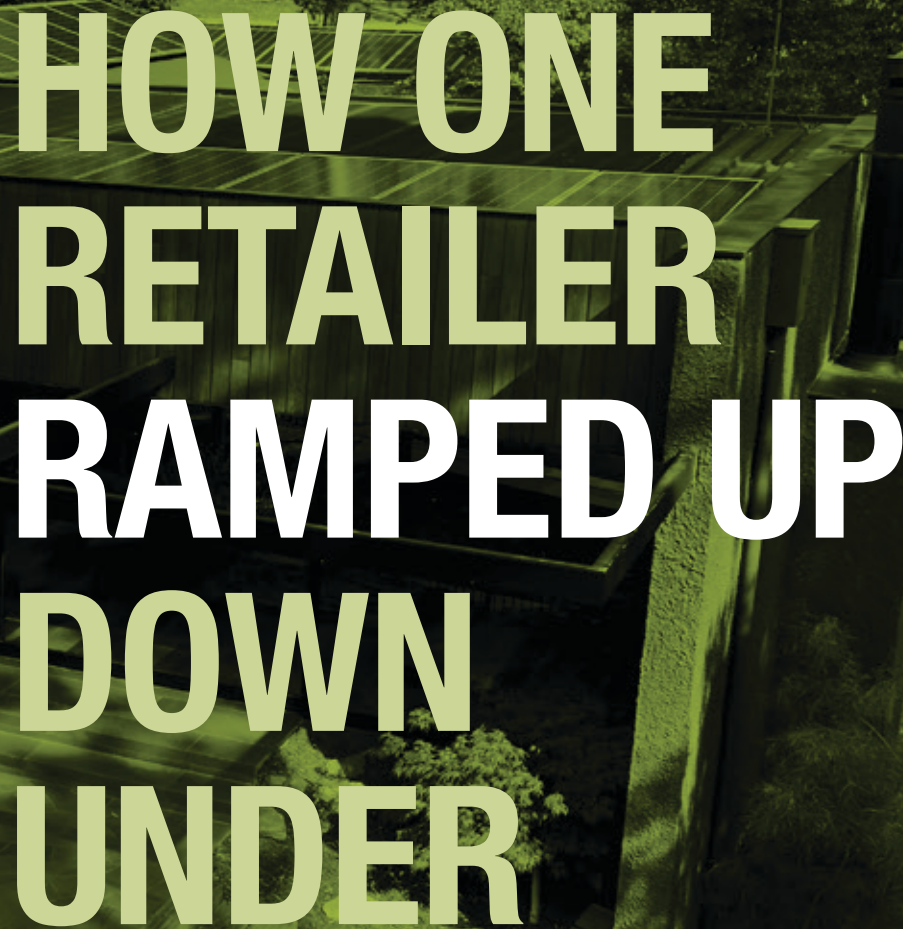
## THE TOOL: A CRM SYSTEM

Whether you're starting with value stream mapping, or just fixing a problem that you know exists, CRM software should help you optimize value-added activities and eliminate non-value-added ones. Follow these implementation guidelines:

- Select tools that help automate or eliminate non-value-added activities.
- Avoid tools where increased management costs outweigh savings or the administrative burden exceeds automation benefits.
- Understand that tools alone do not solve long lead times or high costs.







# HOW ONE RETAILER RAMPED UP DOWN UNDER

## CUSTOMER STORY

### Australia's Access Energy

Australia's residential market explosion taught many solar installers a painful lesson about the value of managing the back office effectively. Mounesh Badiger, managing director of Australian solar retailer Access Energy, said many installers had a hard time keeping track of customer orders, let alone completing installations on time. "Customers were affected on a big scale," he said.

In response, Badiger helped launch Solar eCRM, a business management software tool specifically designed for solar retailers in Australia. With a background in international business and information technology, Badiger recognized the need for a single platform to manage the entire process from sales lead to interconnection. First released in 2012, Solar eCRM is now selling worldwide.

## ENPHASE ADVANTAGE

### Tech Savvy? Try our API

Enphase's API enables tech-savvy firms to integrate their CRM with data in the Enlighten software platform, further streamlining your customer data.



# FIND ONE SOLUTION FOR THE WHOLE COMPANY

## You need a holistic strategy

CRM, once considered only a tool, is a holistic strategy for managing current and prospective customer interactions. Often centered on a single platform, CRM links customer information across multiple company functions from marketing to sales to customer support. This ensures that all customer-facing staff have access to data they need to serve customer needs.

The ideal system can export key customer data, including design criteria, to any forms or web services needed to move a project forward, including permitting paperwork, job scheduling, BOM generation, and more.

Not all activities can be seamlessly automated. However, you can opt for simple solutions like service order templates. Office staff can automatically populate customer contact and system details using updateable fields from quote spreadsheets to word processing files.



### BONUS POINTS // ADDED INSIGHT

CRM can also help aggregate trends about customer buying patterns or customer needs that can help inform future product offerings or pricing.

## FOCUS AREA

# SYSTEM DESIGN & QUOTATION

## Now this is where it gets interesting

In residential solar, the design is the product. The quality of the design creates lasting value by meeting the customer's needs, such as by offsetting air conditioning load in summertime. So all of an installer's tools and processes should orient around streamlining delivery of the design until it reaches the roof.

Evaluate each tool for fitness with your delivery model.

Also consider how strategies and sets of tools support long-term growth plans. Make informed decisions about whether to proceed with separate tools or a unified design tool with a limited proposal function and a more robust set of features for generating plan set drawings. Several tools offer some combination of proposal, pre-design, engineering and permit package features.

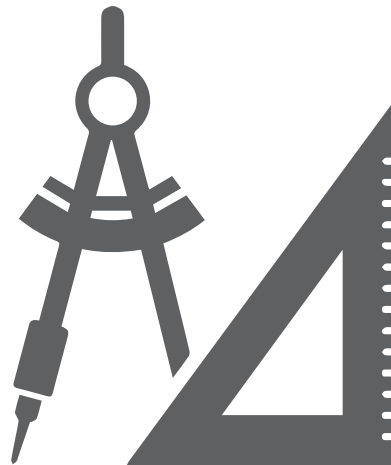
### ASK YOURSELF

*If a proposal tool reduces customer acquisition costs but it can't be used in the engineering phase, does it really provide enough benefit to justify implementation?*

## DESIGN TOOLS AND TEMPLATES

As business software platforms have automated aspects of the customer process, design tools are automating non-value-added activities in the design process. Designers no longer have to separately reference multiple databases and engines. Check for the following resources in your design software:

- Insolation databases
- Historical weather data
- String-sizing tools
- Module electrical specifications
- Product pricing and availability databases
- Utility tariffs
- Available incentives



## DESIGN STRATEGY: CUSTOM DESIGN OR CUSTOM EXPERIENCE?

In less-mature markets, small installers can take the time to offer highly customized designs as standard. In more competitive markets, installers have moved to offering fewer options and, sometimes, kit systems. They focus on customizing the interconnection and customer experience, where the real value lies.

### ENPHASE ADVANTAGE

#### Reduced Design Complexity

To design a string inverter system, you have to cross-check several databases, test various string lengths with combinations of modules and inverters. With the Enphase System, you can focus on a smaller set of design choices, whether it's a simple system or a complex layout covering multiple roof faces and challenging obstructions. Enphase even makes it easy to expand or modify existing systems. Less design complexity leaves you more time to build customer trust and loyalty.

# TOOLS TO TRY

There are many companies offering design and quotation software for the solar industry. Here are two to consider.



## HELIOSCOPE

HelioScope users can define roof or ground arrays, automatically populate them with modules, add inverters, and output a full bill of materials with quantities of conductors, combiner boxes and inverters. The software's flexibility allows users to quickly copy a design and make comparisons to assist in engineering and economic decisions necessary for early stages of commercial project due diligence.

Recent releases offer advanced shade modeling and production impacts. The tool further leverages worldwide TMY data, geo-located array information and product-specific PAN files for energy production estimates. The independent engineering firm DNV GL assessed HelioScope's energy production values to be within one percent of design simulator PVsyst.



## MODSOLAR

ModSolar combines software with service to automate residential system design, proposal generation, contract generation, lead management and related business process management. Installers can reduce the time to develop a bid and put together an attractive proposal with ModSolar's automated and customized design process. The platform is especially helpful visualizing layouts for prospects with complex rooflines.

To start, users enter an address and mark out an area on a satellite image of a target property. The algorithm fills modules into the area, which can be adjusted before coming to a final layout. Then the user can generate a complete proposal and financial benefit analysis to deliver to the prospect.



# TAKE A PAGE OUT OF THE REMODELING CONTRACTOR'S BOOK: DESIGN SERVICE TIERS

Think about how a remodeling contractor bids on a kitchen remodel. The contractor will offer stock, semi-custom and premium lines of appliances, tiles, countertops, and finishes depending on the final price the customer is willing to pay.

Providing product and experience tiers from “stock” to “premium” relies on designing customer experience. It means orienting staff, process, and tools appropriately. **Why should solar installers offer custom or premium products and experiences without establishing the value for that level of service?**

Remodeling contractors also have preferred vendors that they turn to time and again. They don't treat each new job as a chance to research and re-bid subcontracted labor.

General contractors subcontract and outsource many aspects of the business, from professional engineering to heavy equipment use to specialized labor. Think carefully about the workers and tools you need and can carry on your balance sheet versus how often you use them.

# WHAT'S THE BOTTOM LINE?

## 1 // ESTABLISH “STOCK” LAYOUTS

Establish “stock” layouts ahead of time for common module configurations or develop design packages or scripts that can quickly lay out an electrical line diagram. You will learn a lot about what roof areas are most common, what design layouts are most common and what customer preferences crosscut these areas.

## 2 // STREAMLINE YOUR VENDORS

Streamline the vendors you use and the distributors you buy through. Standardize racking, module and inverter choices to substantially simplify design.

## 3 // FLEX THE STAFFING POOL

The costs of specialized design staff can be a burden. Solar companies now have options to flex the staffing pool, using one-person home office designers or design outsourcing firms specializing in solar instead of having a full-time designer on staff.

## FOCUS AREA

# PERMIT PREPARATION & SUBMISSION

## Even permit preparation and submission can be streamlined

Some countries get it right. In streamlined markets, such as Germany and Australia, uniform incentives and simple permitting and interconnection requirements drive operating efficiencies for installers. In fragmented landscapes, the US being a notable example, complex regulations increase overhead, and installers pay an additional penalty due to the administrative burden of monitoring regulatory changes.

Even if permitting is a pain, there are ways to manage it.





# IF THEY MAKE IT TOO HARD, IT'S OK TO JUST SAY NO



Where policies throw obstacles in the way of your business, figure out if the cost of operating in a jurisdiction is worth the added complexity.

## ASK YOURSELF

If an inspector is averse to change, should your crews have to install more than needed? The best approach: educate inspectors about new code-compliant features such as integrated ground. It'll make every install more efficient. Whitepapers and SolarPro articles can serve as handy references for such discussions.

When considering whether to do business in an area, compare:

- Costs associated with permitting fees
- Length of time permits take to issue
- Local requirements that add costs to designing or installing in the area
- Rework cycles associated with redlines before a permit is granted
- Punch lists generated from inspections

The same approach can be applied to incentives. Weigh the costs that incentives may add to the sales process and project operations against the benefits they provide. Sometimes it makes sense to leave the money on the table. That's where California has been going. In the second quarter of 2014, more than 72 percent of residential solar in the state was installed without a utility rebate.

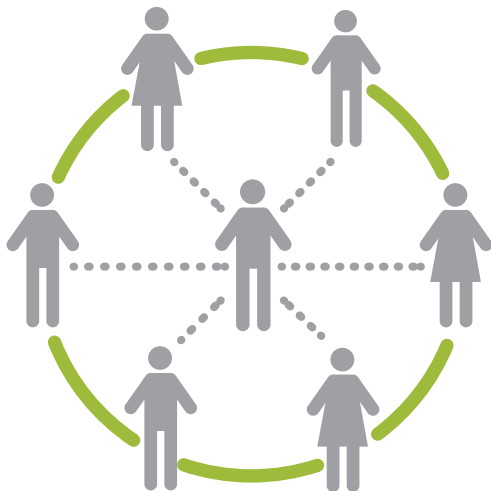
# IN EVERY FOCUS AREA, APPLY THE 80/20 RULE

Project managers know that 20 percent of work consumes 80 percent of time and resources. When streamlining your business processes, focus on the areas with the biggest efficiencies to be gained. If you're already pretty efficient at design, don't finesse that until you've fixed the low-hanging fruit in the other areas of your office.

Within each area, consider the 80/20 rule:

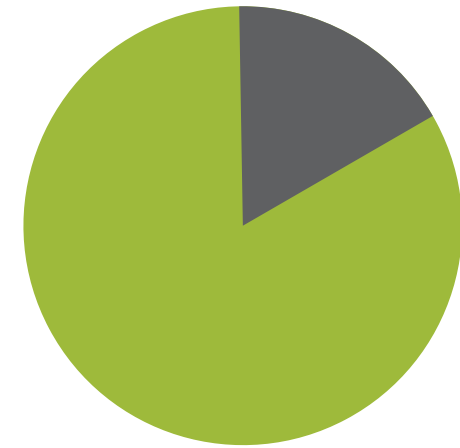
## 1. Customer relationship management

- If 20 percent of your customer paperwork takes 80 percent of your time, look at ways to eliminate those steps, streamline the work, or even avoid the high-maintenance customers that cause the extra work.



## 2. System design and quotation

- Assemble design templates covering the 20 percent of blocks and diagram elements most commonly required in the jurisdictions where 80 percent of sales occur.
- Simplify and standardize the 80 percent of “stock” jobs, putting them through a shorter process path than custom jobs, which need more hands-on attention and specialized staff time.
- Consider refusing jobs that take your design or installation teams outside their comfort zone.
- If 80 percent of your jobs use one type of technology, explore whether you'd gain efficiencies by simply specifying that technology for 100 percent of your projects. Some of the world's most efficient installers use the same setup for every single job.



## 3. Permit preparation and submission

- Using design templates for the common jobs means most of the permit package can be completed ahead of time and allows the designer to focus on customizing only specific information needed by the jurisdiction, the customer or the interconnection.
- Assess which jurisdictions give you the most headaches. If 80 percent of the headaches come from one area: is it worth doing business there?
- Consider refusing jobs in the outlying areas that account for 20 percent or less of your work. The different regulations, paperwork, and even travel may make the jobs less profitable.



SO WHAT  
DO I DO NEXT?

## You're well on your way to streamlining, but there's always more you can do

If you get your back office running effectively and efficiently, you are setting up your whole system for success. Want to dig deeper? Here are some resources to check out:

### **Solar Survival Guide**

Sign up to receive the entire Solar Survival Guide for streamlining the warehouse, the work vehicle, the jobsite and more.

[enphase.com/solarsurvival](https://enphase.com/solarsurvival)

### **Enphase training**

Check out videos, webinars and live training sessions covering all aspects of designing and installing Enphase Systems.

[enphase.com/en-us/support/training](https://enphase.com/en-us/support/training)

### **Enphase partners**

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